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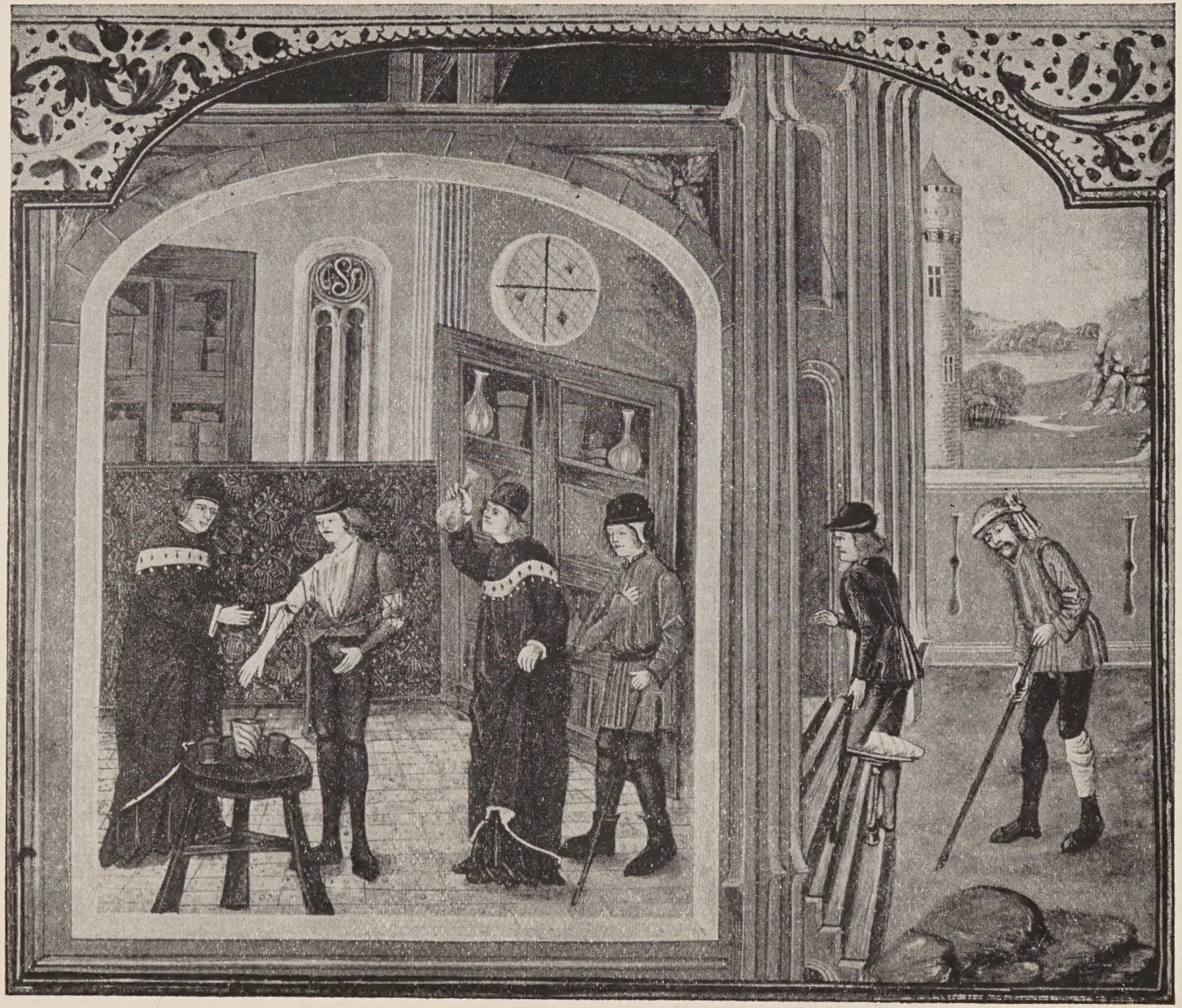
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From a French manuscript, written about the middle of the fifteenth century, of the 'Libre des Propriétés des choses', by Jean Corbechon, 1362. (British Museum, Bib. Reg. 15 E 11, fol. 165.)

JOHN OF GADDESDEN

AND THE

ROSA MEDICINAE

BY

H. P. CHOLMELEY, M.A., D.M.

BRITISH MEDICAL ASSOCIATION

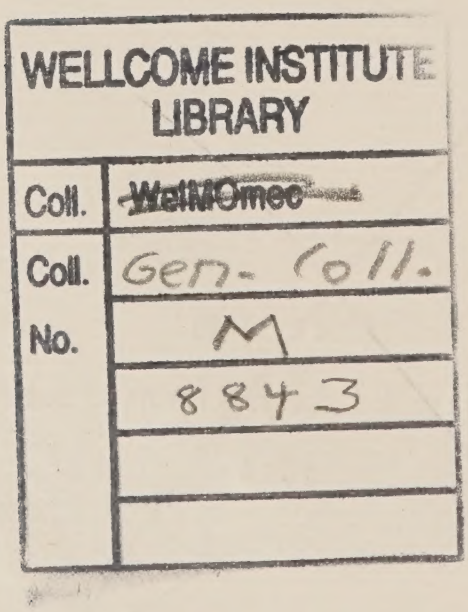
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BZP (Gaddesden)

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PREFACE

THIS study is an attempt to give some account of one who was, so far as is known, the first Englishman who was Court physician to an English monarch, and of his chief work, the *Rosa Anglica*, as it is generally called, though the name which he himself gave it was the *Rosa Medicinae*.

The materials for an essay[1] dealing with medical matters in England, or indeed in Europe during the fourteenth century, are but scanty as compared with the accounts of medicine, medical studies, and medical men which we possess belonging to the twelfth and thirteenth centuries, and the admirable FitzPatrick Lectures of Dr. J. F. Payne and Dr. Norman Moore have already made English readers acquainted with the English medical men of that period.

In the section dealing with the general estimation in which medical men were held during mediaeval times I have had to consult works written so far back as the twelfth century, but with the exception of Guy de Chauliac, who was ahead of his times in surgery, the medical art progressed but little between 1150 and the date of Vesalius. Indeed, if we can believe Molière, the physicians of his time were of much the same kidney as those so amusingly satirized by John of Salisbury in about the year 1180.

[1] 'I was still possessed by the old-fashioned notion, that the word "essay" meant an *attempt* and nothing more.'—AUGUSTUS JESSOP, preface to *Studies by a Recluse*.

Little is known of John of Gaddesden apart from his book. He was a member of Merton College, he was in holy orders, but whether a priest or not is uncertain. He was a prebendary of St. Paul's and a Master of Arts, as well as a Bachelor in Theology and a Doctor in Medicine. For his course at Oxford I have had to depend upon the statutes quoted in Anstey's *Munimenta Academica* and upon Hastings Rashdall's *Universities of the Middle Ages*. For the kind of learning which a well-educated 'Clerk' possessed in the fourteenth century I have taken Chaucer's life and learning as exemplified in his writings.

That the *Rosa* was held in high estimation by some at least of John's contemporaries and immediate successors is shown by the fact that Chaucer mentions it as forming part of the library of his typical physician, and by the way in which it is praised by the editor of the first printed edition. In his own preface Gaddesden remarks, quoting from Galen: 'Quia tamen nullus liber est sine vituperio, ideo nec iste liber sine vituperio erit. Rogo tamen ut istum librum videntes non dente canino mordeant . . . quia quicquid hic dicetur erit vel authenticum vel longa experientia approbatum.' I would ask the same indulgence, because hardly any of the book is original, save the translations, but original works have been consulted, and I have been careful, in accordance with Dr. Routh's dictum, to verify my references as far as possible.

Mr. A. L. Smith gave me some valuable references dealing with information about Grossetete and his medical learning, acquired apparently at Oxford.

Mr. Falconer Madan has been unsparing of himself in answering the many questions with which I fear that I have troubled him; and for advice as to occasional difficulties in translation I have to thank Mr. R. F. Cholmeley, Dr. P. H. Mackellar, and Mr. C. C. J. Webb, who was kind enough to help me in portions of the passage from John of Salisbury.

To the officials in the British Museum Reading Room, especially to Sir G. Warner and his assistant in the Manuscripts Room, I owe much; and I am indebted to Miss J. Lewis for having been good enough to draw up the list of MSS. containing medical pictures, and for inquiring of various librarians as to manuscripts of the *Rosa*, inquiries which they, too, were most courteous in answering.

I wish also to express the gratitude which I owe to the experts of the Clarendon Press, for all the care and trouble which they have taken, in making many most helpful suggestions and for aiding me to fill gaps in my deficient Latinity.

As these pages were being finally revised for press, the death of Dr. J. F. Payne occurred. Of the blank which his passing makes in the ranks of those who write on the history of medicine there is no need to speak. But as one who had the honour of his friendship, who is, as he was, a member of Magdalen College, and who strives to follow him, *longo inter-*

vallo, in an essay on a bygone period of British medicine, I must here record that without his ever-ready aid, and his desire that I should attempt the task, this study would probably have never been written. In the identification of the various writers whom Gaddesden quotes, and in the account of their works, Dr. Payne's wide knowledge of mediaeval writers on medicine was invaluable, and he spared neither time nor trouble, even when the shadow of death was lengthening upon him, in giving me information. No words of mine can express Payne's character better than these of Ennius in describing the friend of Servilius Geminus:

Cui res audacter magnas parvasque jocumque
Eloqueretur, cuncta simul malaque et bona dictu
Evomeret, si qui vellet, tutoque locaret.
Quocum multa volup ac gaudia clamque palamque;
Ingenium cui nulla malum sententia suadet
Ut faceret facinus, levis aut malu', doctu', fidelis,
Suavis homo, facundu', suo contentu', beatus,
Scitu', secunda loquens in tempore, commodu', verbum
Paucum, multa tenens antiqua sepulta, vetustas
Quem fecit mores veteresque novosque tenentem
Multorum veterum leges divumque hominumque;
Prudenter qui dicta loquive tacereve possit.

If this study be found to be a foundation upon which some future investigator, better equipped than myself, may build a revised and possibly corrected account of our first English Court physician, I shall feel that, however inadequately, it has been written in the spirit in which Dr. Payne would himself have written it.

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CHAPTER I

JOHN OF GADDESDEN: HIS EDUCATION

JOHN OF GADDESDEN died in 1361, and was probably born about 1280, so that his active life quite covers the first half of the fourteenth century. The period in question was one which, although of enormous importance in the political and social history of the land, was not distinguished by learning to nearly the same extent as was the previous century. In that century, after the coming of the friars, Oxford had rivalled Paris as a centre of learning; but theology, as might be expected, was the faculty which attracted the great intellects of the age, although Roger Bacon has left an imperishable memory in his *Opus Majus*, which, to quote Whewell, is 'at once the *Encyclopaedia* and the *Novum Organum* of the thirteenth century'. No such monument of intellect as this lightens the fourteenth century, but we have evidence that the ordinary clerk who had received the usual education of the time was at all events well read.

Moreover, during the reign of Edward III English began to be the national tongue to the exclusion of French, and the poetry of Chaucer, with the prose

of Wycliff, brought what they had to say home to the hearts of the people in their common speech, so that any one who could read or hear Chaucer's works would obtain knowledge of a number of authors.

Chaucer, who may be taken as a typical well-educated fourteenth-century layman,[1] be it remembered, was not of noble birth but the son of a vintner, i.e. a member of what is now called the upper middle class. Early in life, however, he seems to have been at court; he bore arms in the campaign of 1359, and was made prisoner. Later on he went to Italy on diplomatic missions in 1372, 1374, and 1378, and between 1374 and 1391 he was Comptroller of Customs, a member of the Commons in Parliament, and Clerk of the Royal Works. Thus he was brought into contact with all classes of society, and his training and habits of life were not moulded by books or cloistral studies but by contact with his fellows.

His writings show that he had read or was acquainted with the works of a number of authors which seems large even in these days, and which may well be called enormous if we consider the difficulties in his day of obtaining books. His learning, as exhibited in his works, is that of a man who was an omnivorous reader, who had what may be called

[1] The word 'layman', both here and below, is used to denote one who, though a 'clerk', was not in full holy orders, nor a medical man.

a good though not an accurate memory, that is to say, he did not always 'verify his references'. Probably, however, this was due in great part to the fact that, owing to the scarcity of books, verification was by no means easy, and many of his errors are due to similar errors in the writings of authors from whom he quoted. But he was acquainted with the English literature, such as it was, of his own time; he knew Latin, French, and a certain amount of Italian, and it is obvious that he had also read or had some knowledge of a number of works now only known to literary specialists, besides the classics.

In Professor T. R. Lounsbury's exhaustive essay on 'The Learning of Chaucer'[1] a list of close upon a hundred books or authors is given concerning which Chaucer shows more or less knowledge. These works contain most of the knowledge of the time, and they include what may be summarized under the term 'letters', astronomy, astrology, chemistry or alchemy, medicine and theology.

Such, then, was the learning possessed by a well-educated layman of the fourteenth century. It was the learning of a 'clerk' of the era, and did not show any out-of-the-way erudition such as that displayed by Robert Burton or Jeremy Taylor some three hundred years later; neither need we inquire here whether or no Chaucer had been at either of the Universities. As, however, he is the type of the

[1] *Studies in Chaucer: his Life and writings* (London: Osgood, McIlvaine & Co., 1892).

educated layman, we may here enter upon the question as to what was the amount of learning possessed by the educated medical man of the time.

Gaddesden's course at Oxford

John of Gaddesden held, among other degrees, that of Master of Arts, and figures as having been admitted as Prebendary or Canon of St. Paul's Cathedral before 1333 (Papal Letters, Rolls Series).

According to Anthony à Wood he was a Doctor in Physick and flourished at Merton College in 1320. Six years' study was required before a M.A. could gain a licence and incept in Medicine as D.M., so that at the latest he must have become a Master in 1314. But most probably it was earlier than this, for he was born about 1280, and scholars in mediaeval days entered at the University very young, e.g. at Merton they were often only thirteen or fourteen years old, so that it may be supposed that John of Gaddesden would enter about 1294. The course in Arts was as follows :—

A child whose parents determined that he should complete the Oxford course had first of all to be instructed in grammar, and there were various grammar schools in the city all connected with the University, the most famous of which (although its palmy days were at a somewhat later date—namely, 1450—than when Gaddesden may be presumed to have begun his course) was the school of the Augus-

ERRATA

p. 13 *note* 2, *for* 424 *read* 438. *This note refers to the end of the third paragraph, not to the last paragraph, on p.* 13

p. 23 *l.* 10 *from foot, for* 7tmo *read* 7mo

p. 68 *note, for* Anselm *read* Anselm?

p. 74 *l.* 13, *for* Liege *read* Liège

p. 180 *l.* 8, for *Methau-* read *Metheo-*

Cholmeley: John of Gaddesden *June*, 1912

To face p. 12

tinians, a relic of which survived until some fifty years ago in the phrase 'doing Austins'.

Merton, however, possessed a grammar master of its own whose duty was to teach the *parvuli*, and these children lived in Holywell and later close to the college in Nun Hall.

The scholars were taught Latin, to compose verse, and to compose essays (*literas*), which latter were to be written 'verbis decentibus non ampullosis aut sesquipedalibus et quantum possint sententia refertis'. Of these verses and letters they had to make a fair copy on parchment, learn them by heart (*corde tenus*), and repeat them to their master. They were to construe both in English and French, the latter, 'ne illa lingua Gallica penitus sit omissa.'[1]

After being well grounded in grammar, the scholar next began his real University course, when he had to attend lectures given in the schools by a Master in the faculty in which he sought to graduate. These lectures consisted entirely of oral instruction, and the scholars were after a time obliged to repeat what they had learned. A relic of this custom existed thirty years ago at Eton in the form of 'saying lessons'.[2]

Four years' study had to be spent before a scholar could supplicate for the Chancellor's licence, 'ad lecturam alicujus libri Facultatis Artium,' and during

[1] *Munimenta Academica*, p. 437 et seq.

[2] *Munim. Acad.*, p. 434. Anstey, in his introduction to *Munimenta Academica*, says: 'The statute in which this pre-

these four years had to present himself for Responsions, which were a kind of exercise preliminary to the great disputations at Determination.

It is as regards Responsions that we meet with the term *parvisus*. Thus the bachelors before being admitted to Determination had to swear that they had disputed 'Parvisum . . . frequentantes',[1] and the testamur given until 1893 for the modern Responsions testified that the candidate 'quaestionibus Magistrorum Scholarum in parviso pro formâ respondit'.

The next step in the Arts course was Determina-

caution is taken is unfortunately of the number of those which are of utterly uncertain date so far as can be ascertained from the MSS., it is, however, ... probably of the thirteenth century.' French, or rather Anglo-Norman, did not finally give way to English until the latter half of the fourteenth century, and for some time previously 'French of Paris' had ousted that of 'Stratford atte Bowe'. In 1362 English was ordered to be the language in courts of law, for French was too unknown. Possibly, then, the above quoted statute is later than Anstey puts it.

In MS. Sloane 1464, a French manuscript of the *Book of Sir John Mandeville* written about the beginning of the fifteenth century, is the following passage: 'Et sachetz que jeo usse mis ceste liverette en Latyn pur plus briefment deviser, mes pur ceo que plusours entendent mieultz Romanz que Latin, jeo l'ai mys en Romanz pur ceo que l'entendent.' The Cotton MS. Tit. C. xvi, written in English about the year 1400, speaks as follows, the passage being an interpolation of the scribe: 'I have put this boke out of Latyn into Frensch, and translated it agayn out of Frensch into Englyssche that every man of my nation may undirstonde it.' These two passages, although not written by Mandeville, seem to show that French was well understood, although beginning to be a 'foreign' tongue in England in 1400.

[1] In 1408.

tion, which ceremony or exercise was the practical taking of the Bachelor's degree. Determinations were held in the Schools by order of Congregation, 'placet venerabili Congregationi Regentium et non Regentium ne liceat eis (the determining bachelors) extra scholas triginta duas infra "vicum scholarum" situatas determinare acta sua'.[1]

Determinations lasted seven days, seven entire days, that is, for the opening and closing days were not considered as entire days, 'diebus primi introitus et extremi exitus minime computatis'. The determiners disputed every day from 9 till 12 and from 1 till 5, so that the exercise was a severe test of ability to argue and to defend propositions. A determiner had to dispute Logic every day except Friday, when Grammar was the subject; and the first and last days 'in quibus disputet questiones'.

The statutes do not seem to consider the question of a determiner failing at Determination, but before being admitted to determine the Bachelor had to obtain a certificate of fitness from certain Masters or Bachelors, and then had to appear before four Regent Masters who had been appointed by Congregation. Here he had to make oath that he had complied with the necessary forms and had 'heard' certain books, such as those of the old logic, twice, and the logical works of Boethius except Book IV, *Topicorum*, once. In the new logic the books *Priorum*, *Topicorum*, and *Elenchorum* had to have

[1] *Munim. Academ.*, p. 240.

been heard twice, but once was considered sufficient for the *liber Posteriorum*.

The candidate also had to make oath that he had 'heard' certain books of Priscian and Donatus *or* Natural Philosophy, by which was meant the *Physica*, the *de Anima*, the *de Generatione et Corruptione*, and the *Historia Animalium*. He also had to swear that he had been through Responsions, i.e. 'publice de sophismatis per annum integre debet respondisse,' or in lieu of this that he had heard the *liber Posteriorum* twice instead of once.

The Bachelor being admitted to Determination then proceeded as above described, and having survived the ordeal of nine days' disputing found himself barely at the threshold of the Arts course. After determining as a Bachelor the scholar had to study for three or possibly four more years, but the statute is very obscure.[1] He could incept without determining, but then he had to have studied for eight years (?) in all.

The studies after determination as a Bachelor and before inception as a Master were chiefly Logic and Natural Philosophy. The authors to be studied are laid down in various statutes, and differ from time to time, but in 1340[2] two logical books were prescribed at the least, 'unum de veteri logica, et alterum de nova'; or both might be read from the new logic together with one book on natural philo-

[1] *Munim. Academ.*, pp. 414, 416.
[2] *Munim. Academ.*, p. 142.

sophy, i.e. Aristotle's works, namely, four books, *Coeli et Mundi*; or three books, *de Anima*; or four books, *Meteororum*; or two books, *de Generatione et Corruptione*; or the book, *de Sensu et Sensato*; together with the treatise, *de Memoria et Reminiscentia* and that *de Somno et Vigilia*; or the *de Motu Animalium*; together with two books, *de Minutis Naturalibus.*

Shortly, it may be said that the full Arts course included the seven Arts, namely, Grammar, Rhetoric, Logic, Arithmetic, Music, Geometry, Astronomy; and the three Philosophies, namely, Natural, Moral, and Metaphysical, although these do not appear to have been laid down by statute before 1431.[1]

So much for the studies, but before taking his degree as a Master the candidate had to get a Master to present him to the Chancellor and the Proctors, which Master had to take oath that he believed the candidate 'aptum et idoneum moribus et scientia ad eum gradum ad quem praesentatur'.[2] More than this, the Proctors, by the authority of the Chancellor, were to summon eighteen Regent Masters 'per quos veritas melius inquiri poterit'; and of these eighteen, nine had to depose that of their certain knowledge, and five that of their belief, their candidate was a proper person to receive the degree. The presenting Master was not to be one of the eighteen.[3]

These formalities being complied with, the candi-

[1] *Munim. Academ.*, p. 285. [2] Ibid., p. 378.
[3] Ibid., p. 424.

date appeared before the Chancellor, with whom the Proctors sat as assessors, and on taking the oath of obedience to the University and that he would 'incept' within a year, received his degree.[1]

'Inception' apparently meant that the newly appointed Master began a course of official lectures, and he had to continue these lectures during the year of his inception and the year following,[2] and if he did not do so, 'denuncietur nec inter Magistros et Scholares Oxonienses recipiatur.'

The Arts course, then, was obviously a severe training in intellectual studies; it was mainly made up of dialectic,[3] but to have passed through it with success meant that a man could hold his own in ordinary life, that he had an understanding, so far as was then known, of physical science, and that he had mingled with his fellow men from various districts of his native land and with foreigners for some seven or eight years.

But of literary or artistic training as we now understand it there was virtually none except one term's study of music 'per terminum anni, videlicet

[1] *Munim. Academ.*, p. 383.

[2] Ibid., p. 419.

[3] The *ars logica* or *ars dialectica* was, however, it must be remembered, considered as a necessary part of a medical man's training. See the decree of Frederick II quoted below, and the requirements for a medical man laid down by Isidore of Seville. Scholastic disputations were not always, it must be remembered, of the 'Utrum Chimaera in vacuo bombinans possit comedere secundas intentiones' type.

Boethii',[1] and probably music was but little understood except by those trained in a religious house. Greek, of course, was practically unknown.

Enough, however, has been said to show that a Master of Arts possessed a very good mental training, and if, as many graduates in arts did, he proceeded to study in one of the higher faculties, it is obvious that he would do so much better equipped than many a student nowadays who begins the study of medicine or even law.

John of Gaddesden was not only a Master of Arts but also a Doctor in Medicinis[2] and a Bachelor in Theology, and he presumably took his medical degree before that in theology, for the course for the latter was very long and the *Rosa Anglica* was written about 1314.

Supposing him to have been born in 1280, he would scarcely enter at the University before the age of fourteen years, i.e. in 1294. He would then spend at least two years in the study of 'grammar', and would then in 1296 begin his studies for the Baccalaureate. This would bring him to the year 1300, while in three more years he would be a Master. Thus he would begin to study medicine in 1303.

[1] *Munim. Academ.*, p. 286.

[2] A. Wood, *Antiq. Oxon.*, Lib. ii, 'Johannes de Gatisden de quo sic Vetus Sociorum hujus Collegii (Merton) Catalogus Doctor in Medicinis qui fecit Rosarium Medicinae. Claruit 1320.'

Preliminary Studies for Inception in Medicine

The statutes concerning degrees in medicine and the studies are by no means clear. For inception in Medicine, *inceptio ad lecturam*, which apparently included the taking of the B.M. degree,[1] the candidate had to have 'read' one book of the *Tegni*, i.e. τέχνη, of Galen, or one book of the Aphorisms of Hippocrates, *pro majori parte*. These were to serve as far as 'theory went'. As regarded practical medicine, the candidate must have read one book of the *Regimentum Acutorum* of Hippocrates, or the *Liber Febrium* of Isaac, or the *Antidotarium* of Nicolaus (Praepositus, of Salerno). A candidate must also have responded to the Masters Regent in the faculty for two years.

Before being allowed to practise in Oxford he had, if he had previously graduated in Arts, to spend four years in the study of medicine; and to pass an examination conducted by the Masters (Doctors) Regent in that faculty. If he were not a graduate in Arts, eight years' study were required.

For licence, candidates had to have heard *Medicinalia* for six years, to have read *cursorie* one medical book *de practica* and another *de theorica*, and to have responded and opposed in all the medical schools for two years.

The Statutes apparently mean that a graduate had to spend six years' study in all and a non-graduate

[1] *Munim. Academ.*, p. 406, n. 2: 'prius incipitur a Medicina et gradu bachilariatus in eadem.'

eight years. Certain exercises known as *Vesperiae* had also to be performed. When all the terms of study had been duly kept and all the exercises performed, the candidate was admitted to the Master's (Doctor's) degree after the same form as that appointed in the Faculty of Arts.

Thus it seems that the fourteenth-century English physician could enter upon practice without any other knowledge than that derived from books.

Matters were very different at a somewhat earlier date in some parts of the continent. In the kingdom of Sicily, for instance, one of the glories of which was the great school of Salerno, strict injunctions were laid down from time to time by the Emperor Frederick and others to insure, so far as might be, that medical men should be soundly educated. Moreover, unqualified practice was strictly forbidden.[1] A decree to which the date 1241 has been assigned,[2] provides, it will be seen, not only for a thorough education, including human anatomy for a surgeon, but also for a post-graduate course.[3]

[1] Appendix B, section 1.

[2] Huillard-Bréholles, *Hist. Diplom. Fred.*, vol. iv. pt. 1, p. 235.

[3] Appendix B, section 2.

CHAPTER II

THE ROSA ANGLICA

The British Museum possesses four printed editions of the *Rosa Anglica*. The first was printed at Pavia in 1492, and is a folio printed in double columns, black-letter with contractions. The second was printed at Venice in 1502.[1] This is also black-letter, with contractions and in double columns. The printing is clear and beautiful, and superior to that of 1492. Another edition was printed in 1517. Finally, an emended and rearranged edition was printed at Augsburg in 1595. The editor was Dr. Philipp Schopf, who altered John's Latinity here and there and also the arrangement of the subjects, which it must be said was somewhat confused in the original editions. But he to a great extent destroyed the quaintness of the work by leaving out the preface and many of Gaddesden's extremely curious derivations, although he kept some of them.

In his preface, which will be found below, John of Gaddesden says: 'Haec omnia ego Joannes de Gadesden 7mo anno lecturae meae compilavi.' This gives us more or less an actual date for the

[1] Not 1516, as is often stated.

book, although the dates are mostly provisional, viz.:—

1280. Birth of Gaddesden.
1294. Entered Oxford for grammar.
1296. Began studies for B.A.
1300. Graduated as B.A.
1303. Incepted as M.A., and began to study medicine.
1307. Graduated B.M. 'Inceptio ad Lecturam.'
1309. Graduated D.M. 'Inceptio ad Licentiam.'
1314. Wrote *Rosa Anglica*, i.e., in the seventh year of his 'lecture', which began in 1307.

The Preface to the Rosa Anglica

Sicut dicit Galienus primo de ingenio sanitatis: non visites curias et aulas principum: sicut nec ego feci quousque sciverim libros; quia dicit Galienus 7mo de ingenio in prohemio non est possibile per aliquod fieri proximius deo quam per scientiam. Ideo humilibus optavi facere istum librum. Quia cum nullus liber est sine vituperio; sicut dicit Galienus 2ndo de crise; ideo nec iste sine vituperio erit. Rogo tamen ut istum librum videntes non dente canino mordeant sed humilitate pertractent, quia quicquid hic dicetur erit vel authenticum, vel longa experientia approbatum: quae haec omnia ego Joannes de Gaddesden 7tmo anno lecturae meae compilavi. Circa quem librum talem volo observare processum quod primo volo nomen investigare cujuslibet morbi; 2ndo diffinitionem; 3to occasionem ejus et causam, juxta illud Isaac 4to febrium et de icteritia: 'Omne quod volumus investigare tribus modis intelligimus, aut suo nomine quod est ad placitum, aut diffinitione ejus natura ⟨m⟩ ostendente, aut actione ejus effectum demonstrante, et ibi actio idem est quod occasio vel causa.' 4to dicam signa generalia et specialia, quae

accidentia infirmo sunt signa medico, ut dicit Joanitius c⟨apitulo⟩ de signis officialium membrorum. 5to prognosticationem, 6to curam et ibi sequendo Mesue, dicam quae sunt facienda in cura cujuscunque morbi periculosi et curabilis. Ante tamen capitulo primo ista fiant volo nomen isti libro imponere, vocando ipsum Rosam Medicinae propter quinque additamenta quae sunt in rosa, quasi quinque digiti tenentes rosam, de quibus scribitur.

Tres sunt barbati sine barba sunt duo nati.

i. e. tres articuli vel partes circumdantes rosam sunt cum pilositate, duae sunt sine, et ideo erunt hic quinque libri. Primi tres erunt barbati barba longa, quia ad multa se extendent, quia erunt de morbis communibus, et quot modis dicatur morbus communis vel vilis vide in prohemio secundi. Duo sequentes erunt de morbis particularibus cum declaratione aliquorum omissorum in precedentibus, quasi sine barba. Et sicut rosa excellit omnes flores, ita iste liber excellit omnes practicas medicinae, quia erit pro pauperibus divitibus chirurgicis et medicis, de quo non opus multum recurrere ad alios libros, quia hic videlicet sat de morbis curabilibus in speciali videbitur et in generali.

The conclusion of the preface is simply a list of headings of chapters in the first book.

Translation of above Preface

As Galen says in the first book of his treatise *de Ingenio Sanitatis*, 'Do not frequent courts and princes' houses:' as indeed I never did until I had acquired a knowledge of books,—for Galen in the introduction to the seventh book of the *de Ingenio* says that it is impossible to become nearer to God by any other way than by the way of knowledge

—therefore I have wished to write this book for the humble to read. Because since no book is without reproach, as Galen says in the second book of his *de Crise*, so neither will this one be. But all the same, I implore those who see it not to gnaw it with an envious tooth, but to read it through humbly, for nothing is set down here but what has been proved by personal experience either of myself or others, and I, John of Gaddesden, have compiled the whole in the seventh year of my 'lecture'. And in regard to the whole book I intend to observe the following order of arrangement: first of all I try to investigate the name of any disease, secondly its definition, thirdly its incidence and cause. As Isaac says in the fourth book of his Fevers and in his section on Jaundice: 'We can discuss everything which we wish to investigate in a triple fashion: we can consider either its name, which is a matter of arbitrary convention; or its definition, which indicates its nature; or its action, which indicates its effect, and in this use '*actio*' is equivalent to incidence or cause.' In the fourth place I give an account of the signs, both general and special, and what happenings to the patient are signs to the medical man, in accordance with Joanitius in his treatise on the signs of the official members.[1] In the fifth place I give the prognosis and in the sixth place the cure, and here following Mesue I give all things which are to be done for the cure of any dangerous disease which is capable of cure.

But before these matters are treated in the first chapter, I wish to give a name to the book, namely, the *Rosa Medicinae*, and I have so called it on account of five appendages which belong to the rose, as it were five fingers holding it, concerning which it is written:

Three are bearded and two are not.

[1] Vide Appendix on the Isagoge.

That is to say, three of the parts surrounding the rose are hairy and two are smooth, and the same is the case with the five parts of my book. The first three are bearded with a long beard, for they treat of many things and about general diseases, and for a discussion of what constitutes a general or common disease look in the introduction to the second book. The two following books treat of particular diseases, together with some matters omitted in the preceding books, and they are as without a beard (shorter).

And as the rose overtops all flowers, so this book overtops all treatises on the practice of medicine, and it is written for both poor and rich surgeons and physicians, so that there shall be no need for them to be always running to consult other books, for here they will find plenty about all curable disease both from the special and the general point of view.

The copy of the 1492 edition, which is the one I have used, is that belonging to the Library of the Royal Society of Medicine, and originally belonged to Dr. Mead. It is dedicated by the editor, Nicolaus Scyllatius Siculus, in a delightfully fulsome preface, to Ambrosius Varisius Rosatus Ducalis Physicus ac Consiliarius. The duke was Ludovico Maria Sforza. The full Latin text will be found in the appendix. The editor begins by saying that, in his opinion, the gods were originally men who had been elevated to this position on account of benefits which they had conferred on their fellow men. If Ambrose has not quite attained to this height as yet, it is well known that every one respects and honours him. He is accomplished in the law, in diplomacy, in physic, and in letters, and under his patronage the University of

Pavia has attained to an eminence never before known. The editor therefore begs to dedicate the *Rosa* as 'a learned and eminently instructive little present' to Ambrosius. He continues:

'Joannes Antonius Birreta (the printer) told me a short time ago that he had obtained a *Rosarium in Medicina*, an uncommon and scarce work, one of the greatest use to young men, and one, too, specially sought after by the old and experienced. He offered me every opportunity of reading it, and therein I discovered many recondite matters which these, after some other modern writers, Nicolaus Florentinus, a man skilled in every branch of medicine, had picked out and embodied in his mighty volumes, just as a bee picks out the more useful parts from roses. Now, since the said Birreta, who is a model of old time worth, as he is modest in demanding anything, asked me to correct the book (though it was not for him to *request*, to whom I owe my life), we have performed the task at the expense of much trouble and research. We have to the best of our ability restored that which was maimed by the mouldiness of long lying by and corrupted by the carelessness of scribes, the places where old writers were wrongly quoted have been diligently collated, and so far as possible the book has been restored to its original shape. So that the real old Rosarius, like a prodigal recognized on his return from long and difficult wanderings, is restored at last in his best robe to his friends. ("Ut qui Rosarius olim fuisset, nunc agnitus veluti ex horrida et longa peregrinatione, domum tandem excultus ad suos rediret.")

You, therefore, Ambrose Rosatus, he recognizes as his patron and lord, and you who frequent kings' houses and the palaces of princes he has gained as

his defender. When you read him, you will not mind reading him again, so varied and of such tried worth, so many and so quick to cure, are the remedies which he sets forth. Whence it comes, and that rightly, that as it has been for a long time received amongst us that the rose is the most beautiful of flowers, so this book easily overtops the labours and treatises of all the more recent authors who have written on the same subject.'

Scyllatius then goes off into a digression upon the beauty of the rose, and quotes a story from Libanius of how Venus, wishing to make herself beautiful for the judgement of Paris, supplied the place of the cestus, which the jealousy of Juno and Minerva would not allow her to wear, with roses. He concludes his dedication with a high compliment to Birreta and his partner Franciscus Girardengus for the care with which they always did their work.

Unfortunately the opinion of Ambrose upon the *Rosa* has not come down to us, but it is evident that Scyllatius thought most highly of the work.

Nothing seems to be known of Ambrose, but Dr. Payne kindly sent me the following note:

'Ambrosius Varisius Rosatus. He does not seem to be mentioned in any biographical dictionary. Apparently he was a medical big-wig of the day, being Physician to the Doge of Venice, &c., and was a greater man than the editor Scyllatius. This latter wrote a little tract on syphilis, and also dedicated it to Ambrosius Rosatus (Pavia, 1496, 4to) according to Hirsch, *Biog. Lex.* In a copy of the *Articella* published at Pavia, 1510, there is a dedication to Ambrosius Rosatus by a certain Rusticus Placentinus.

He says, " excellentissimo philosopho, consummatissimo medico, magnifico viro domino magistro Ambrosio Varisio Rosato, Rusticus Placentinus theorice medicine in Ticinensi gymnasio lector ordinarius. S. P. D."

I think it shows that Ambrosius was probably an influential and wealthy man who might reward the dedication with a handsome present.'

The *Rosa* commences with a treatise in two sections on Fevers after the Galenic system, and then goes on to consider the ' particular diseases '. A section on surgery follows, and the book ends with an Antidotarium.

The work is largely a compilation from the Greek, Arabian, and Jewish physicians, together with the works of his immediate predecessors such as Gilbertus Anglicus and Bernard of Gordon, but it also contains many personal observations which show that Gaddesden must have had a large practice.

HYDROPS

As an example of Gaddesden's style the section on Hydrops may be taken as characteristic. The disease (for naturally he considers it a disease) is very fully treated, and in the description we find passages which show both his knowledge and his limitations. It begins thus [1]:

' Idropisis is a watery disease inflating the body. The name "Idropisis" is derived from "idros", which is water, and ' isis ', which is inflation, that is to say

[1] *Rosa Anglica*, Pavia, ed. 1492, f. 36.

a watery inflation. And so Haly in the third part of the commentary on the *Tegni*, 192, says, "Subtile and watery juices bring about watery sicknesses such as hydrops." And it is thus defined: Hydrops is a material sickness of which the cause is a cold matter, overflowing and entering into the limbs, and thence arise either all its manifestations, or empty spaces of those organs in which is carried on the government of the food and the humour. ("Idropisis est egritudo materialis, cujus causa est materia frigida, exuberans, ingrediens membra: et crescunt per eam aut manifesta omnia, aut loca vacua partium in quibus sunt (*sic*) regimen nutrimenti et humoris.") So says Avicenna, Fen. 14, tract. 4, cap. de idrope. Again he says, Hydrops is an error of the combining energy (*virtutis unitivae*) in the whole of the body, following on a change of the digestive energy in the liver. So much we may gather from Avicenna, Can. 1, fen. 1, doctrina 6, cap. 2, and also in book 6 *de naturalibus virtutibus*. For there he says that when the nutriment is combined (*unitur*) in a limb, there it remains and swells it up. And Avicenna also says that when the nutriment does not cleave (to the members) thence arise hydrops. For the nutriment undergoes a triple dissolution:[1] in the first it is digested and dispersed throughout the members; secondly, it is combined; and thirdly, it is assimilated. Others say that in the first place it is distributed; in the second it cleaves (*adhaeret*)

[1] Macrobius, circa 380 A. D., in his *Saturnalia*, Bk. VII, through the mouth of Disarius, one of his characters, says that the food undergoes four digestions: the first in the stomach; the second in the liver; the third in the veins and arteries, where the watery part is separated and goes into the bladder, while the pure fattening blood is distributed over the body; and the fourth is that process by which every member of the body takes up that which is necessary for it.

and in the third becomes fit for nourishment and is assimilated. When it is not distributed there arises "sinthesis" or widespread emaciation; when it does not combine, or cleave to the members, there arises hydrops; when it is not assimilated there arise leprosy (*lepra*) or morphea, as will be shown further on.'

A few lines further down he repeats his former definition, 'Idrops est error virtutis unitivae in toto corpore, sequens mutationem virtutis digestivae in epate'; but he adds, 'non est idropisis nisi epar patiatur.' And so Galen, in the third part and fourth chapter of his work on interior diseases, says, 'Epar idropici non est epar.'

He then goes on to quote from Galen to show the intimate sympathy which exists between the liver and the other viscera, pointing out its anatomical continuity with the stomach, the intestines, the kidney, and many other parts of the body 'per venas magnas', while it is tied to the heart, 'cordi colligatur per arterias.'

There are three kinds of Hydrops:—hyposarca, ascites, and tympanites. Hyposarca is that form in which there is 'materia phlegmatica penetrans cum sanguine in membra'. It was so called from ὑπό and σάρξ, 'quasi sub carne stans aqua et ideo in ista specie hydropisis est inflatio universalis'. The complaint was also called anasarca.

Ascites is that species of hydrops in which the watery material is effused 'in spatium ventris inferioris' and the effusion lies between Mirac and

Siphac.[1] These words Gaddesden explains as follows:

'Est autem Mirac pellicula gibbosa, sive pinguis supra totum ventrem, propinquior cuti exterius. Sed Siphac est pellicula adhaerens intestinis in medio, et involvens ea, et supportans inferius dividens ea a membris generativis ut videbitur infra; et haec aquositas intrat per poros illius Mirac rarefacti vel extensi a multitudine materiae indigestae in hepate quam non potest expellere et ideo ibi manet. . .'

Tympanites, the third kind of hydrops, is, says Gaddesden, wrongly called hydrops, for it is not humidity but ventosity. So far, then, if for 'the quantity of undigested material in the liver' we read 'portal obstruction', the pathology of the fourteenth century is not far wrong, but when Gaddesden comes to speak of the general causes of hydrops the same cannot be said. He quotes Galen to show that hydrops is a 'nocumentum virtutis generativae sanguinis, quando deficit ab illo opere et deest complementum ejus'.

Another frequent cause is cold, and another is retention of the wonted evacuations. Here he quotes Hippocrates concerning the danger of curing old haemorrhoids, for 'si non una relinquatur periculum est hydropem fieri'.

With regard to the special causes of hydrops he lays special stress upon all foods which cause 'Malam complexionem hepatis calidam.' These are such

[1] Mirac is the abdominal wall, minus the peritoneum. Siphac is the peritoneum, or sometimes, possibly, the great omentum.

things as foods salted or fried, spiced, overcooked? (*assata*), and highly flavoured things such as garlic, chives, and leeks. This remark shows a certain amount of observation, for although such articles of food would probably have no direct causative influence upon cirrhosis, yet they are the very things forbidden to lithaemic patients, and by causing indigestion might not improbably be a factor in doing harm to those of a gouty tendency or those who suffer from arterial sclerosis.

It is when we come to the clinical picture of a case of ascites with obstructive jaundice that Gaddesden shines, for it is wonderfully vivid:

'Signa ascitis futuri sunt: malus color faciei tendens ad citrinitatem, urina tincta frequenter, neque tamen patientes de morbo conqueruntur: citrinitas oculorum frequens, et nocumentum lateris dextri sub costis quando patiens movetur, vel statim super cibum equitat; post coitum, aut tussim.

Signa actualis ascitis sunt: inflatio pedum et membrorum inferiorum: et umbilicus eminet extra, et superiora fiunt gracilia ut brachia, collum, pectus: pulsus est parvus et frequens, urina tincta, spissa, in parva quantitate micta et frequenter, cum spuma crocea et bicolor: aliquando oculi inflantur propter fumos ascendentes ab hepate: adest anhelitus difficultas, tussis sicca, sitis fere inextinguibilis, appetitus cibi diminutio, propter intensum appetitum potus, et si venter agitetur, sonat velut uter semiplenus aqua.'

The clinical picture is complete, and worthy to be compared with those drawn by Watson or Trousseau, though naturally when Gaddesden ventured on patho-

logy he failed. His remark that 'aliquando oculi inflantur propter fumos ascendentes ab hepate' is a case in point, but in everything that he could observe he is singularly accurate.

Gaddesden paid great attention to treatment, and was evidently fully ready to meet the universal demands of patients, that a medical man should 'do something for them'. His prescriptions are innumerable; as Freind says, 'He seems to have made a collection of all the *receipts* he had ever met with or heard of: and I believe this book can afford us the best history of what Medicines were in use, not only among the Physicians of that time, but among the common people of *England*, both in the *Empirical* and *Superstitious* way.' The cure of hydrops is dealt with both from the general and the special point of view.

The general cure he deals with as follows (f. 39 verso, first col.):

'The cure of hydrops is of two kinds, common and proper. The proper is by means of various appropriate medicines and by local measures. The common, as says Avicenna, is by extraction of the watery humidity and its drying up, and this extraction may be carried out in four ways, as Constantine lays down in the seventh book of his Practice. The first method is by diuretic medicines which provoke a flow of urine such as spica (? nardi),[1] cassia and the like. The second method is to purge out the

[1] Where plants are not well known by their Latin names I have translated them according to the names given in Henslow's *Medical Works of the Fourteenth Century* (Chapman & Hall, 1899)

yellow fluid by means of sweating and discharge from the bowels. For this latter effect use purging drugs such as succus ireos (? mugwort) and succus laureolae (spurge laurel). Emetics and clysters can also be used. Sweating can be brought about by sulphur bath or sea baths, or by suffumigations with water in which have been boiled such roots or herbs as pellitory or levisticus (ligusticum officinale), together with bran; or with inunctions of hot oil, with laurel bark or a hot ointment such as arogon, agrippa, or martiaton. The third method is for the patient to drink his own urine. This remedy is good not only in hydrops, but also in jaundice and in the splenetic affection. The whey of goat's or cow's milk also purges. The fourth method is by means of an incision three fingers' breadth below the umbilicus, and a deep perforation made therein, or by a perforation made in the bursa testiculorum, or by intercutaneous scarifications between the joints of the feet, or above the feet or round the ankles. Incision, however, is dangerous, and must not be performed unless the patient is very strong. Avicenna says, "when the belly is full of water and the strength is well maintained, then make an incision and let out the water, but little by little and not all at once."'

And it is specially to be noted that diuretics should be of a hot nature, and of such are anise, bishop's weed (ameos), marathrum (fennel), cumin, peony, wild carrot, spikenard, cassialigni, assarabaccara (*geum urbanum*). Hence the lines,

> Assarabaccara, cassialignea, spicaque nardi
> Idropisim curant de causa frigidiori.

And spica Celtica (*lycopodium*) balsam, squinanthum (*juncus communis*) are also good.

Diuretic herbs and roots of a hot nature are: nasturtium, hyssop, ebulus (*sambucus ebulus*), apium macedonicum, levisticum, eupatorium (wood sage), wild parsley, fennel, juniper, aristolochia (both kinds), savory, dittany, absinth. Also cinnamon, sweet flag, and the like. Of a cold nature are all the sandal woods, endive and its seed, sow-thistle, scariola (this is apparently another kind of endive), epatica. The four greater cold seeds are those of capillus veneris (maiden hair), lettuce, portulacca, and scariola. Lithospermum and ivory turnings are also good.

Of drugs which are valuable for either variety the hot or the cold are: spikenard, wood sage, maiden hair, endive, scolopendrium, hepatica, sandal wood, mastich, nutmeg, goat's milk whey, rhubarb (*per accidens*), for the liver is strengthened by all kinds of this drug, and the same may be said of agaric and cassia.

The directions for treatment by incision are given on f. 41, where, at the end of a long list of remedies and treatment, he says:

'If the dropsy is not cured by any of these, and its energy seems still unabated, an incision must be made three fingers' breadth below the umbilicus. Care must be taken not to draw all the water off at once lest the patient suddenly die, as is laid down by Messue in the sixth book of his Particular Affections in the Aphorism "Of those suffering from empyema (*empici*) or who are hydropic".

The manner of the incision is as follows:

Let the patient sit in a slightly elevated seat, and let the belly be forcibly compressed by the hands so

that the watery matter may descend as far as possible. Then make an incision three fingers' breadth below the umbilicus with a sharp knife, the external skin being slightly elevated from the rest of the body, as far as Siphac, if the hydrops be from the intestines. If it come from the liver or the neighbouring parts make your incision to the right of and three fingers' breadth below the umbilicus. If from the spleen, make it on the left side. Lift up the skin lest Mirac be cut, then perforate Mirac, but make the hole in Mirac somewhat lower down than that in Siphac, so as to have them on different levels, that the water come not out continuously. Then put in a canula made of gold or silver or bronze. Then feel the patient's pulse, and if he be weak take out the canula and give medicine or dressing made of down (?) (*plumaceolum*) dipped in wine or white of egg. Make the patient lie down and give him chicken broth with spicey medicines, or food of easy digestion such as partridge, kid, or lamb. On the second day take off the dressing, replace the canula, and draw off some more water, and do this three or four times.'

On f. 39 urine, it will be noted, is used as a purgative, but further on (f. 41 verso, col. i) he gives a prescription for the cure of a hydropic child which includes diuretics. This prescription being only for wealthy persons, he recommends that if the patient be poor he should drink his own urine in the morning of every day. Urea, it will be remembered, has been comparatively recently introduced as a diuretic.

Another foreshadowing of modern therapeutics is seen in his directions for the diet of hydropics (f. 40 verso, col. ii). The diet should be 'tenuissima quia abstinentia hic est summa medicina'. Chicken broth

made from an aged cock or hen is useful, and the patient should only eat once in the day. He continues, 'Panis eorum non sit de tritico quia propter viscositatem oppilat, sit de furfure et non azymus cum modica salis quantitate.' Such bread 'conciliaret sitim patienti'. He does not, however, recommend this bread in diabetes, although he notes that this disease is accompanied by a '*sitis canina*'.

The mention of the small quantity of salt in the above passage, together with the following a line or two further on: 'et ideo panis de kokobeco decoctus oxomiae (? oxoniae) non valet quia nimis est salsus,' is worthy of note on account of the recently introduced treatment by 'dechloridisation' which has been of late years much in evidence in France.

In a work by Dr. F. X. Gouraud with a preface by Professor A. Gautier entitled *Que faut-il manger?* published in Paris by Jules Rousset (1910), there occurs the following passage, p. 253:

'Plus nombreuses sont les indications du *régime hypochlorure.* C'est dans la néphrite, et surtout dans la néphrite avec œdème, qu'il a d'abord été préconisé par Widal, et c'est là qu'il donne les plus beaux résultats. Il amène souvent une rapide résorption de l'œdème . . . Les beaux succès obtenus dans l'œdème d'origine rénale ont conduit à utiliser le régime hypochlorure dans tous les cas d'hydropisie, quelle qu'en soit l'origine, chez les cardiaques, les hépatiques avec ascite, même dans les phlébites infectieuses (Chantemesse). Pour les premiers il est souvent utile sans être curateur.'

Freind in his *History of Physick* notes Gaddesden's fondness for secrets, and it is true that he has many. But the *Rosa Anglica* was written for medical men in the first instance, a fact upon which the author rather plumes himself in his preface, and therefore he has no hesitation as a rule in disclosing the composition of his secret remedies.

Thus he describes a course of a preparation of Iris and of *succus morellae.* The iris was to be given one day and the *succus morellae* on the following day (f. 41 recto, col. i). He proceeds:

'Hanc Medicinam Regalem voco et hae aquae sunt pro delicatis, pro dominabus et pro divitibus et sunt secretae et sine vituperio hominum; nec debent doceri laicis, quia sunt de summis meis secretis; quod si scirent homines vulgares vilipenderent artem et Medicos contemnerent.'

Again, f. 40 recto, col. i, he says:

'Pono aliquando loco ligni aloes spicam nardi, et si substantia hepatis non sit resoluta procul dubio liberatur, sicut sum expertus in viginti et amplius et est electuarium plus valens in quavis hydropis specie, quam species Diatrionsantalon quia recipit tantum quantum confectio Diatrionsantalon: Et est electuarium idropicorum mihi specialissimum nec debet dari nec administrari nisi accepto salario.'

Had he known him, Gaddesden would have agreed with Matthews Duncan, who used to say to his students, 'If you don't believe in yourself, nobody else will,' for he never fails to make the most of his successes. On f. 124 recto, col. i, he gives a pre-

scription for the stone which contains some thirty different drugs, and this he says: 'ego voco syrupum raphaninum, qui mihi fecit infinitum honorem in quodam calculoso quem alii demiserunt et cum isto solo curavi eum.' It must be owned that this reads rather like the advertisements of modern quacks, but then they do not disclose the ingredients of their remedies, whereas Gaddesden does.

Marcellus Empiricus in the 4th century employed frogs in the cure of toothache — the sufferer, however, spat in the frog's mouth and then cut it loose.

One of his specially valuable secrets was a prescription for extracting teeth, for which he remarks, 'grandem pecuniam accepi a barbitonsoribus,' and it was this, 'Capiatur rana viridis quae de arbore in arborem scandit, et in Provincia satis copiose reperitur, sumatur ipsius adeps et eo liniatur dens quisquis sit et statim excidet' (f. 155 verso, col. i).

He does not profess to have personal knowledge of the efficacy of this remedy in human beings, but he adds as a proof that cattle who eat these frogs in the grass lose all their teeth. That tree-frogs do not live in the grass is a small matter which does not trouble him, and most likely the mediaeval patient would prefer a trial of this remedy to the more purely surgical one recommended, namely, to destroy the tooth, 'stylo ferreo ignito.' This being applied, the tooth 'post aliquod tempus cadit in frusta'. Sundry charms for toothache are also given, which will be found below.

Possibly the best known passage in the *Rosa* is one which occurs in the section upon small-pox, for the remedy, after having been in abeyance for

centuries, has now come in again in a modified form and has both supporters and detractors ;[1] namely, the red light treatment. Gaddesden was probably led to try it owing to the mention of it by Gilbertus Anglicus, who notes it as an old woman's remedy as follows. The passage can be found in the Lyons edition of the *Compendium Medicinae*, 1510, fol. 348 verso, col. i :

'Vetulae provinciales dant purpuram combustam in potu, habet enim occultam naturam curandi variolas. Similiter pannus tinctus de grano.'

Anyway, Gaddesden met with success in at least one case, and, moreover, his patient was a scion of Royalty. Here is his account (fol. 51 recto, col. ii) :

'Deinde capiatur scarletum rubeum, et involvatur variolosus totaliter, vel in panno alio rubeo, sic ego feci de filio nobilissimi Regis Angliae quando patiebatur istos morbos, et feci omnia circa lectum esse rubea, et est bona cura, et curavi eum in sequenti sine vestigiis variolarum.'

It will be noticed that Gaddesden claims that this treatment cures the disease and prevents pitting as well, whereas the moderns who have tried it claim that it prevents pitting, but not that it shortens the course of the disease, *qua* small-pox, but only by preventing mixed infection from suppuration.

[1] Finsen, *Brit. Med. Journ.*, June 6, 1903 ; and Ricketts and Byles, *The Lancet*, July 30 and Sept. 17, 1904.

Phthisis

The section upon phthisis (f. 64 verso) is very clear, and shows, as is usual with Gaddesden, good clinical observation.

He defines phthisis as 'Morbus pulmonis, tussim commovens et Hecticam causans'. Every phthisical patient is hectic, but every hectic patient is not necessarily phthisical. This observation was virtually correct in Gaddesden's day; but his explanation is naturally in accordance with the erroneous physiology of the age. As the lungs are ulcerated, they cannot sufficiently ventilate the heart, and whenever the lungs expand the wounds in them increase, then sanies is drawn back and 'fumi aucti, et non sufficienter eventati' go all over the body, inflame it, dry it up, and consume it, and so cause hectic. But it does not follow that in every case when a man is 'consumed' that his lungs are ulcerated, wherefore every hectic is not necessarily phthisical.

With regard to treatment he is quite modern. A real cure can only take place before the lung has broken down 'ante confirmationem et ante exulcerationem saniosam et ante ejus foetorem et descensum ad profundum aquae'.

He was aware that hectic was not an essential part of phthisis, although the latter caused the former, for in his directions for treatment he gives one set of instructions for treating phthisis and another for treating 'putridam febrem vel Hecticam conjunctam'.

'For the cure of this,' he says, 'the reader must refer to what I have said about Rheuma, in fact this heading must be frequently referred to.' As Rheuma is defined as 'fluxus humoris ruentis a capite ad partes subjectas et vicinas', and that to its malign influence was due deafness, tinnitus, blindness, ophthalmia, lippitudo, foetor and polypus of the nose, angina, phthisis, pleurisy, peri-pneumony, 'fastidium,' 'fluxio cerebralis ventris,' arthritis, and, in fine, disease of any organ except the spleen, it is obvious that the chapter treating of Rheuma must be studied profoundly. Moreover, he says, 'Est enim Rheuma quasi mater omnium morborum.' And it was of three kinds—Catarrh, branchus, and coryza, which are defined in the following verses:

Ad fauces branchus, ad nares esto coryza,
Si fluit ad pectus dicatur rheuma catarrhus.

To return to phthisis, Gaddesden gives the following thirteen indications for treatment, and they might almost have been written to-day:

'(1) Keep in check the catarrh and the rheumata; (2) cleanse the body; (3) divert and draw away the matter (of the disease) to a different part; (4) strengthen the chest and the head so that they do not take up the matter, and that it there multiply; (5) cleanse and dry up the ulcers and expel the matter from them; (6) consolidate them; (7) restrain and cure the cough by using demulcent drinks with ointments and stupes; (8) assist the patient to sleep; (9) strengthen and bring back the appetite; (10) keep in check the spitting of blood; (11) do what can be done to make the breathing more easy and to remove the

asthma and the hoarseness ; (12) regulate the way of life so far as the six non-naturals; (13) cure the putrid or hectic fever which goes with the disease.'

(The six non-naturals were, air, food, exercise, sleep, the excretions, and the passions.)

He gives a gigantic list of drugs and remedies in regard to the first eleven indications for treatment and then comes to the regimen.

'As to food, the best is the milk of a young brunette with her first child, which should be a boy ; the young woman should be well favoured, " bene complexionata et non utatur coitu," and should eat and drink in moderation. Failing a wet nurse, the milk of other animals might be used in the following order of choice : the ass, the goat, and the cow. If the patient liked, he could take his milk straight from the udder ; if not, it was to be boiled with a little salt and honey, so that it should not coagulate in the stomach, for in that case it was a very poison (" tunc est quasi venenum "). Wine and milk should not be taken together, for wine coagulates milk in the stomach. If the patient has pain and colic after his milk, it does not agree with him. Therefore the dish should be washed with hot water and placed in another vessel full of hot water and the milk milked into this, for then it is converted and changed quickly and becomes less harmful.'

The patient could also have wine if it were new, and provided that he were not very hectic. He should, further, live in a dry, clear, and still atmosphere and at a high elevation ; and here Gaddesden reminds his readers that Galen used to send his

phthisical patients to a high mountain near Sicily where there was perpetual fire.

Leprosy

Gaddesden's account of leprosy is particularly interesting, from several points of view. It may be taken for granted that the terms '*lepra*' and '*leprosus*' were used in the Middle Ages to signify various chronic skin diseases, and possibly syphilis as well as true leprosy. But that true leprosy was very prevalent in mediaeval times is undoubted, and, moreover, from the descriptions left us by mediaeval writers, it is plain that the disease was the same then as now.

Here is his list of the signs of leprosy (f. 56 verso, col. i):

'The signs of leprosy are many, and in the first place come the prodromal signs, while the prognostics are yet concealed ("primo sunt signa precedentia prognostica occulta tamen"). Secondly come the obvious and manifest signs of the presence of the disease; thirdly come the signs reminiscent of a former materia (*māē antecedentis*); fourthly signs showing forth an accompanying materia.

In the first place you must note if the usual red colour of the face tends towards a black hue, and if the patient suffers from gutta rosacea in his nose or his face, if his breath undergoes a change and is sometimes foetid, if he sweats much and his hair begins to get thin and sparse. Also look out for a change in his manner, he may become melancholic and vicious and tricky (*dolosus*). He will be anxious and will avoid society, and will fancy that he is a leper. Such a mental condition should be avoided,

for imagination in one disposed to this disease very often actually brings it about, especially when combined with errors of diet. Sometimes the patient suffers from horrible dreams and awakes in a fright, so that he dare not sleep alone. He may dream that he feels a heavy weight on his chest as do those who are afflicted by an incubus, and yet this is nothing but the weighty "material" dispersed throughout the body. He may dream that he cannot run, or that he is falling into some foul and filthy place ("somniat se currere non posse, vel cadere in loco turpi fetido sterquilinoso").[1]

Again, if lice are multiplied on his body from some intrinsic cause and not an extrinsic one, as is the case with those who sleep in a hair shirt, if he take no care for his body by bathing and the like, if the itch and pustules and morphea appear all over his body, and if generally speaking he is in a filthy condition ("Si incipiat fieri fetida corporis dispositio"), then in the case of such an one I say that it may be prophesied that he is disposed towards leprosy, that in him leprosy is *in posse* (*inchoata*). As yet, however, he may mingle with his fellows, though not so safely as another.'

He quotes from Joannes de Sancto Amando a list of absolutely certain signs of leprosy ('signa valde certa demonstrativa leprae'). These are:

The colour of the body tending towards black,

[1] It is worth while, as a contrast to this bald description, to quote the magnificent passage dealing with the same dream of inability to move, given by Vergil, *Aen.* xii, lines 908–912:—

Ac velut in somnis oculos ubi languida pressit
Nocte quies, nequicquam avidos extendere cursus
Velle videmur, et in mediis conatibus aegri
Succidimus; non lingua valet, non corpore notae
Sufficiunt vires, nec vox aut verba sequuntur.

laboured breathing and a husky voice ("strictura anhelitus et vocis") frequent sneezing, a nasal tone of voice, thinness and falling of the hair, a foul-smelling sweat and breath . . . swelling of the face and of the limbs, "rotunditas" of the eyes, a greasiness of the skin, so that a drop of water will not stop on it but runs off, and insensibility of the calf is a common sign.'

He proceeds:

'I can add many to these, for instance, when the little and middle fingers and toes, or even the others next to them, feel cold and sleepy, as if sensation were wanting, and when, as sometimes happens, the anaesthesia extends to the skin between the fingers or toes, and reaches up the arm, or in the leg as far as the hip, there is a certain sign of leprosy. So are impetiginous eruptions. If these are cured, the places remain bald, or at most have a few thin hairs on them. Formication, tickling, and pricking are felt.'

He mentions the lividity and distortion of the nails and the falling of the eyebrows, the ulceration of the septum nasi, the fixation and dropping off of hands and feet, and the thickening of the lips.

He evidently appreciated the fact that the sentence of isolation was a most serious affair, for he says:

'No one is to be adjudged a leper and isolated from all his fellows until the appearance and shape of his face be destroyed. And therefore "cancer" in the feet and a foetid skin disease should not be taken as a proof of the disease even when accompanied by a nodular eruption, unless this be on the face. And because many are leprous before the appearance of these signs, be it known that there are three signs common to every form of leprosy ("Com-

munia in omni lepra").[1] The first is to take three grains of salt and to place them on some blood (from the suspected patient), and if the blood be infected straightway it will be dissolved (*statim resolvetur*), but if it be not infected this will not happen. The second is for some of the blood to be rubbed on the palms of the hands, and should it squeak or be more sticky than usual, this is a sign of corruption. Thirdly, take some blood and place it in very clear water, if it swim on the top it is infected, but if it sink to the bottom it is not so.'

He mentions this thickening and rapid clotting of the blood in three or four different places, and it is interesting to note that Boeck and Danielssen have noted a large increase in the fibrin ferments of the blood of lepers.[2]

Charms

Gaddesden, in common with Gilbert and other medical writers both before and after his own time, such as Mirfield (circa 1387), did not disdain to make use of charms and empirical remedies. Thus in his section upon toothache, p. 153 recto, col. ii, he says :

[1] There were four varieties of Lepra, which Gaddesden embodies in verse as follows (fol. 56 recto, col. i):—

Sub specie tetra deturpat corpora Lepra :
Tiria prima datur, de flegmate quae generatur :
Turpe pilos pascens Alopicus sanguine nascens ;
Fitque Leonina, colera fervente canina ;
De mel. (ancholia) fit tristis Elefantia tristior istis.

[2] Art. 'Leprosy' in Allbutt's *System*.

'Modo fiant emperica quae aliquando curant in principio. Radix apii collo suspensa dolorem dentis tollit. Idem facit radix piloselle majoris et minoris, et radix diptami.' (Pilosella is Mouse-ear Hawkweed.)

Then he gives a selection of charms and prayers:

'Again, write these words on the jaw of the patient: In the name of the Father, the Son and the Holy Ghost, Amen. + Rex + Pax + Nax + in Christo Filio, and the pain will cease at once as I have often seen.

Again, whosoever shall say a prayer in honour of St. Apollonia, Virgin, (Feb. 9) shall have no pain in his teeth on the day of the prayer. The same thing is said of St. Nicasius the martyr (Oct. 11).

Again, draw characters on parchment or panel and let the patient touch the aching tooth with his finger as long as he is drawing, and he is cured. The characters are made in the shape of running water by drawing a continuous line, not straight but up and down. Three lines are to be drawn in the name of the Blessed Trinity and this is to be done often.

Again, if the many-footed "worm" which rolls up into a ball when you touch it is pricked with a needle, and the aching tooth is then touched with the needle, the pain will be eased.

Again, some say that the beak of a magpie hung from the neck cures pain in the teeth and the uvula and the quinsy.

Again, when the gospel for Sunday is read in the mass, let the man hearing mass sign his tooth and his head with the sign of the holy Cross and say a pater noster and an ave for the souls of the father and mother of St. Philip, and this without stopping; it will keep them from pain in the future and will cure that which may be present, so say trustworthy

authorities ("et preservat a dolore futuro et curat presentem, secundum veridicos").'

One of his numerous remedies for epilepsy is as follows. The rationale of it is interesting (f. 78 verso, col. 1). After giving directions for a cuckoo to be roasted until it can be powdered, he says that the powder is to be blown into the patient's nostrils at the time of the paroxysm and he will recover. Or the remedy may be used in food or drink either before or after the paroxysm. Again, the patient may wear the head of a cuckoo suspended from his neck, which will preserve him from the fall or will at least retard and greatly alleviate it. 'I have tried this remedy,' he says, 'with success in many cases of children who could not take medicine. And the reason for this doing good is that the cuckoo suffers from epilepsy every month, and therefore, according to some, it has a peculiar property of attracting the epileptic "materia" to itself, just as rhubarb attracts the jaundice (*coleram*).' His advice to epileptics as to their habit of life is sound, and may shortly be summed up in the aphorism, 'all overs are evils.'

In another charm for bleeding at the nose (f. 10 recto, col. 1) he quotes from Gilbert in the third book of his *Practica*. The physician is to say 'In nomine Patris et Filii et Spiritus sancti, Amen; Caro cum Calice confirma sanguinem israhelitae'. At the same time he is to pour out water nine times and strain it through the shirt of the patient. Then the shirt is to be given to the patient or to his messenger,

who will in turn hand it to the patient. ('Novies versando aquam et colando per camisiam infirmi, quam tribuas ipsi patienti vel nuntio nomine infirmi, quam tribuat ipsi patienti.')

In the account of semi-tertian fevers (Emitritei), f. 16 verso, col. 1, he gives a prescription from Serapion: 'Item in libro de proprietatibus rerum, dicitur quod smaragdus suspensus ad collum patientis curat emitriteum.' In this connexion it may be noted that over two hundred years after Gaddesden's time, Cardan, who was born in 1508, gives the following advice to his sons: 'Ferte hyacinthum in digitis ad somnum conciliandum, et adversus pestem et fulgura. Smaragdum collo pueris suspendite ob comitialem morbum, cerebrum enim confirmat.'

For the cure of scrofulous glands (f. 34 verso, col. 1) he gives a long list of remedies, including an application made from snails and liquorice. In case of failure of these remedies he proceeds, 'then let him go to the king to be touched and blessed by him, for this disease is called "morbus regius", and the touch of the most noble and most serene king of the English is of avail.' Even this may fail, and in that case the aid of a surgeon must be sought.

With the above may be compared the following prescription, written about 1500 A.D. in an English book of Horae, circa 1440:

'Pro morbo Caduco.—Take xij candylls of ye length of ye chefe joynt of ye hande, and the xiij candyll as long as iii of the sayd xii and gar synge

on messe of the holy ghost and gar leyght the sayd xii candylls and apun every candill wryhte on name and apun the lange candill Jhc and apun the ryght syd sante peter and apun ye lyeft syd sante paulle and apun ylke on of the oyer candills sette a name of the xij appostylls so that vi stand on the on syd and vi apon the toyer . . . and heyd whilke of the candills indureth the longest and to the same Appostyll the seky body must woue to fast the evyn to brede and water while he levys.'[1]

Journey Matters

As an illustration of the hygiene of the fourteenth century, Gaddesden's instructions to travellers may be quoted. They are given on f. 171 recto, col. 2:

'Those who are going on a journey, or who cross the seas, or are going to the wars, or on pilgrimage, or to the schools, or market, or to see their friends or acquaintances, or (in the case of medical men) the sick should do as follows. As a general instruction applicable to all these cases, it is good to begin by being bled, or by "taking medicine" (*farmacari*) and fasting, so that the body may be cleanly disciplined, otherwise there is a risk of fever, or of an apostema, of a flux or of a ruptured blood-vessel. So Galen intimates in his commentary on the first book of the Aphorisms. In spring-time madness and melancholy are to be feared.

In warm weather, thirst and heat are best resisted as follows. Take sugar of roses or violets or water-lilies or diaci coreata made from conserve of chicory flowers and sugar, or else take "candi" or tamarinds

[1] M. R. James, *Catalogue of MSS. in the Fitzwilliam Museum*, MS. 51.

or barberry or sorrel and partake of these often on the journey. The three sandal woods or diadragantum cold, or diapapaver infused in cold water and iced(?)(*infrigidata*)are also good. Again, a drink may be made from sugar and vinegar or from pomegranate wine, or syrup of roses or violets or water-lily, or vinegar syrup, or the bread may be dipped in vinegar and other things may be eaten as laid down in my first book. If any one have drunk too much, if it be a man the testicles should be washed with salt and vinegar, and if it be a woman, the breasts, also let them eat the leaf or the stalk or the juice of a cabbage with sugar.

If the air is hot or foul smelling, then let the wayfarer smell camphor or roses or violets, and in very hot weather let him smell musk or wood sage (*ambrosia*), laudanum, camomile, laurel leaves or marjoram. Let him hold his nose if fetor is present, and on rising let him eat a toast in aromatic wine or chesnuts roasted with the same.

After hard work in hot weather the feet must be washed with water in which has been boiled camomile, fennel, and betony. Wine of artemisia root should also be taken, for in this way the fatigue and weariness will almost completely disappear and will hardly be felt. Let him carry with him some artemisia and a stalk of agnus castus, for by so doing he will not stumble by the way, nor will he be tired on the day that he shall do this. And before he goes out in the morning he should annoint himself with aragon and marciaton. He should eat roasted meat and garlic with good wine or pigmentum; he should also take dianthus and diatriton and diagalingale pliris with musc.

If he be a poor man let him take three graines of olibanum and pepper, or six leaves of mint, and let him smell laudanum and olibanum on account of the

rheum. He should not go to work immediately after eating, nor fill himself up (with drink (?)) at night. But if under such circumstances he should sleep well in the night and the morning let him after a little fast until the following day until the effects of his debauch have passed away ("nec repleat se in nocte, etsi sic bene dormiat in nocte et mane, post paulatim incedat cum abstinentia sequentis diei, quousque crapula recedat").

The feet should always be washed with hot salt water, dried, and then annointed with goat's or ram's fat, and in the same way the perinaeum (*peritoneon*), on account of the excoriations which may have occurred during the journey.

Linseed mucilage or flea wort (*psillium*) may be used for this latter purpose, although some use a candle with good results. According to Galen in his *Regimen Sanitatis*, those who work hard ought to take baths of very hot water, so hot in fact that at first sight it looks boiling.

If, however, a man be not accustomed to this he will do well to foment his extremities with a decoction of roses, violets, and camomile, to rub them gently and to live temperately. Those who travel in winter should wear a garment made of two layers of fabric, wadded with cotton next to the shirt lined with fox, lamb, or rabbit skin.[1] On their head let them wear a cap lined with thick budge[2].

[1] The meaning of this last sentence is very obscure. I owe the translation to the efforts of Sir G. Warner and his assistant in the Manuscripts Department of the British Museum, who spent much time and trouble in endeavouring to solve the mystery. I should add that they expressed themselves as by no means satisfied with the result of their efforts, and therefore it is as well to give the original Latin. It appears on the verso of f. 171, col. 1: 'Et portent itinerantes in hiemi vestem cum duplici tela et coto in medio punctato juxta camisiam.'

[2] Budge, Latin *Bogettus*, a kind of fur.

They should also have a hood coming down as far as their shoulders, or they may wear a thin kerchief on their head. They should keep their feet warm and dry so far as possible, and dry them carefully before going to bed.

Let them take care of the fever which arises from (?) flatulence (*ventositate*) and the sun, and let them not go close to the fire when they are very cold, but let them rub their limbs for a little, not far from the fire.

Water should not be drunk while on the way, in any manner, for that brings about an "apostema et febrem oppilando quia transire moratur rem"; (?) by checking the fever, prevents it from "coming out."'

It is worthy of note that the extremely hot bath, recommended by Gaddesden, has been for centuries, and still is, in use by the Japanese. Pliny, however, in his attack on the medical men and the medicine of his day, *Hist. Nat.* XXIX, cap. viii, objects to them, 'illa quae sani patimur . . . balineae ardentes, quibus persuasere in corporibus cibos coqui, ut nemo non minus validus exiret, obedientissimi vero efferrentur.'[1]

Surgery

Comparatively a small portion of the *Rosa* is devoted to surgery. Gaddesden's account of the operation of tapping has already been quoted. Other operations described by him are lithotomy, an operation for hernia, and the reduction of dislocations.

[1] Whether *efferre* here simply means 'to carry home', or is used in the technical sense of 'to carry out for burial', is uncertain.

Of the last named, the account of dislocation of the jaw is worthy of note.

He describes it as a rare accident. It may occur from direct violence or from frequent yawning, or from trying to take too large a mouthful of anything. And therefore men bless themselves when they yawn, lest this accident should happen, or even sudden death. He adds, 'I once saw one of my household who during his convalescence from a fever yawned so often, and opened his mouth so widely in doing so, that he dislocated his jaw.' To reduce the dislocation, an assistant should hold the patient's head while the surgeon puts his thumb into the mouth, and after moving the jaw from side to side he must extend it suddenly until the upper and lower teeth are on a level, then let him reduce it. Another method, which is successful if carried out as soon as the dislocation has happened, is for the patient to give himself a sharp blow on the chin, in a backward and at the same time upward direction. A friend who is present may be asked to do this. Gaddesden adds that he saw this procedure followed with success in the case of one of his friends who dislocated his jaw at the table. If reduction is difficult and there is much muscular resistance (*durities*) the patient may be put in a bath and the '*durities*' rubbed with oil. Then the patient should lie on his back and the surgeon should place his thumb in the mouth as aforesaid. The assistant, standing behind the patient, is to steady the condyles of the jaw just

under the ears, and when the surgeon has extended the jaw sufficiently he can press them into place. A bandage must then be applied. The weariness of convalescence described here must often have been in evidence during the Middle Ages, when few people could read, and even when they could books were scarce. The mention of sudden death from yawning is due to the belief that it was possible for evil spirits to enter the system through the open mouth.

Wounds

As regards the treatment of wounds, he notes the following points. The object of the surgeon is to (1) remove any weapon, or any other foreign body which may be in the wound; (2) stay the bleeding; (3) make choice of a proper dressing; (4) restore the continuity of the tissues; (5) bleed and drug the patient, if necessary; (6) attend to his way of life; (7) avoid, if possible, the development of a dyscrasia or a hot swelling, and cure them if they do occur; (8) bring about a comely (*pulchra*) cicatrix, and remove proud flesh if it should arise.

If these counsels were those of perfection in Gaddesden's day, it is yet noteworthy that the mediaeval surgeon knew what he should do. Almost identical directions are given by Lanfranc, (*ob.*) 1300, and the methods of dressing wounds as described by both Gaddesden and Lanfranc are also practically the same. One important difference, however, is to

be observed between the practice of the two, and Gaddesden is rather severe upon 'modern operators who operate after the ancient methods and in accordance with Lanfranc and Roland and Bruno'.

And the point on which they differed was as to the treatment of a wound involving a bone. Lanfranc taught[1] that, in case of a wound involving the bone, the flesh should never be sewed about the bone, until the bone be quite repaired. Gaddesden says that this treatment is quite wrong; and adds (fol. 157 verso, col. 2): 'In the case of an arm, if any part of it remain in continuity, and the wound be quite recent, it should be at once joined up, bone to bone and flesh to flesh, so that so far as possible the original condition may be restored. Then it should be carefully sutured and a dressing of hot white wine, as hot as the patient can bear it, applied as I have described above.' It would be interesting to know the fate of a bad compound fracture, treated in either manner, in mediaeval times, but Gaddesden's method is certainly preferable to Lanfranc's.

Derivations

Mediaeval writers had one specially good side to them, in that they were fond of giving reasons. That the reasons were often quite incorrect was due to the limitations of the times in which they lived, but the tendency was a valuable one. Gaddesden, for

[1] *Science of Cirurgie*, English translation circa 1380, E.E.T.S. original series, No. 102, p. 48.

instance, is generally careful to give the derivation of the name of a disease. Thus in his description of phthisis he says, 'It is called *ptisis* as if from *ptesis*, which is retention, because the disease inhabits the body for a long time. Or else it is called *ptisis* from *tussis*, because it itself is caused by the cough.'

Again, 'Epilepsy is so called from *epi*, which means above, and *ledo*, for it is a lesion of the upper parts, i. e. the head. It is also called *ieranosos*, from *iera*, i. e. sacred, and *noceo*, namely, a disease which hurts the noble parts.' Again, he says of hernia (fol. 166 recto, col. 2): 'It is called *hernia quasi rumpens enia*, i. e. the intestines, or else the *enia* are the paniculi and the membra nervosa. Or else it is called *hernia*, *quasi heredem necans*, because it impedes generation. Or else it is so called from its breaking through the thin membrane which is spread over the intestines, or else *hernia* from *haerens* because the intestines do not adhere to the pellicle to which they should adhere.'

In speaking of the Arts course at Oxford it was mentioned that Greek was practically unknown, and a remarkable proof of Gaddesden's ignorance of that tongue is afforded by a passage (fol. 99 verso, col. 1) in his section on Sterility, which, after a prescription containing chelidonia, runs as follows: 'et hic nota quod *chelidonia* dicitur quasi *celi donum* et ipsa aufert maculam oculorum: et hirundo quaerit eam quando ejus pulli non vident et matricem mundificat.' It is impossible that any writer save one

entirely ignorant of Greek could have given the absurd derivation of chelidonia from 'celi donum' and immediately afterwards have mentioned the swallow, χελιδών.

The sparkle of the following derivation evaporates in translation, so I have left it in the original. 'Paritoneon' is perinaeum (fol. 30 verso, col. 1): 'Paritoneon dicitur a "pari" quod est juxta, et "tonoas" quasi juxta tonantem, quia est juxta anum scilicet intra virgam et anum.'

Cosmetics

As is usually the case in mediaeval treatises on Medicine, the *Rosa* contains a section entitled, 'De Decoratione.' This gives instructions for the cure of facial blemishes such as freckles, pustules, sunburn, and the like. There are also prescriptions for complexion washes and preparations for making the breath and the body smell sweet. Gaddesden, however, with the common sense which he usually displays, mentions that in addition to using scents such as myrrh, amber, and musk it is of great importance to avoid over-eating or the eating of anything which is likely to cause eructations. Moreover, any one who studies to possess a sweet savour should take baths and see that his underclothing is clean and frequently changed. He concludes this section by saying, 'These things have I written for delicate women and for ladies, and indeed for noble men, wishing to give them pleasure, but now I have said

enough. You will find much other information in the works of those who have written about Cosmetics or women's complexion colourings (*fucis*).'

He gives no names, but he possibly had Arnold de Villanova in his mind. That able and somewhat turbulent personage, who was at once physician, alchemist, and theologian, had no love for women. In the proem to Book III of the *Breviarium Practicae*[1] he says: 'In this book I intend, God being my helper, to treat of those sicknesses which specially concern women, and as women are in general venomous animals I shall follow it up with a treatise on the bite of venomous animals.' Despite this very ungallant opinion, his works contain a long treatise entitled *de ornatu mulierum*, together with its sequel, *de Decoratione*. This contains innumerable prescriptions for depilatories, hair dyes, complexion washes, and applications to remove wrinkles whether on the face or on the belly after childbirth. There are also prescriptions for making the breasts firm, together with others dealing with matters of an even more intimate nature.

Gaddesden's Theological Degree

Besides being a Doctor of Medicine, Gaddesden

[1] This treatise was generally ascribed to Arnold de Villanova, and in Cap. 51 of Bk. I he calls himself Arnold, but the authorship is doubtful. Much indeed of the matter professedly written by him probably was not so, and the *Cautelae Medicorum* were almost certainly not. I have used the Basle edition of the *Opera Omnia*, 1585.

was a Bachelor in Theology and held sundry ecclesiastical benefices. It does not, of course, follow from this that he was in full orders, and indeed various Councils fulminated against the clergy, both regular and secular, leaving their first estate and practising either civil law or medicine.

In the *Sacrorum Conciliorum Collectio*[1] there are various decrees against such practices.

Thus the Sixth Canon of the Council of Rheims, 1131, inveighed against monks and regular clergy who despised the rules of the blessed Benedict and Augustine, and who practised law and medicine for worldly gain. The leech was looked upon as being immodest. 'Cumque impudicus oculus impudici cordis sit nuntius, illa de quibus loqui erubuit honestas non debet religio pertrectare.' Practice in these two faculties was therefore forbidden, and bishops, abbots, and priors who connived at the custom were to be degraded.

The Lateran General Council of 1139 repeated this canon almost word for word, and the Council of Montpellier in 1162 contained the following:

'Prohibuit praeterea sub omni severitate ecclesiasticae disciplinae, ne quis monachus vel canonicus regularis aut alius religiosus ad seculares leges vel physicam legendas accedat.'

Again, the Lateran Council of 1215 forbade subdeacons, deacons and priests to practise any surgery which involved cutting or burning. These canons

[1] Ed. J. D. Mansi, Venice.

were, however, ignored to a great extent. Theodoric, for instance, was a bishop as well as surgeon to Innocent IV.

In the Papal Letters (Rolls Series) are the following entries:

'To John de Gadesden. Provision of a canonry at Chichester with reservation of a prebend, notwithstanding that he is Rector of Norton in the Diocese of Lincoln.[1]

Concurrent mandate to the Bishop of London, the Prior of Lewes, and the Dean of Hereford.

To John de Gabshede, Master of Arts and of Medicine. Reservation of a dignity in the gift of the bishop-chaplin of London, he being a Canon of the same with expectation of a prebend and Rector of Cheping Norton, which last he is to resign.[2]

Concurrent mandate to the Abbot of Leicester, the Dean of York, and another named.

To the Bishop of Winchester. Mandate to provide to John de Gatesden, Master of Arts and Medicine and Bachelor of Theology, a canonry of London with reservation of a prebend: notwithstanding that he is Rector of Chipping Norton, value 40 marks, which he is to resign.'[3]

The prebend which Gaddesden eventually obtained in London was that of Wildland, and according to Le Neve he was appointed in 1342.

Hennessy says:[4] 'Prebend of Wildland. This prebendary had the eighth stall on the left side of

[1] 1333, 2 non Dec., Avignon.
[2] 1333, 10 Kal. Oct., Avignon.
[3] 1336, 3 non Jul., Pont de Sorgue.
[4] *Novum Repertorium.*

the choir, and the corps of his prebend is in the parish of Tillingham in Essex. The Psalms for daily recitation were the 17th to the 21st inclusive.' Gaddesden's predecessor was Robert de Redeswell, and Hennessy gives the date of Gaddesden's appointment to the prebend as 1332, which is probably a misprint for 1342, as in the papal letter above quoted, dated 1336, reservation of a prebend in London for him is mentioned.

The 'Rosa'. General Remarks

The style of the *Rosa* may be said to be popular, although Gaddesden treats the various diseases after a definite arrangement. But just as Master Nicolaus Scyllatius told Ambrosius that the book could be read again with pleasure, so any one who reads it nowadays will constantly come across passages which have a delightful freshness in them. Take a few. On fol. 144 recto, col. 2, he gives a prescription for weakness of sight. Among other things it was composed of tutty quenched fifteen times in the urine of a virgin youth, rose water, balsam, and white wine, together with marjoram, fennel, spikenard, long pepper, and lign aloes. This was to be mixed with the gall of a crow, a swallow, or a hen, and then rubbed up with honey. The patient was to take it partly as a food and partly as a collyrium, and Gaddesden adds, 'It will make him see small letters to the end of his life, and the contents in urine, and

the veins in the arms. And therefore it is of great value to all barber surgeons.'

Again (f. 127 recto, col. 1): 'Diabetica passio est immoderatus fluxus vel exitus urinae per renes, cum vehementia sitis, et vocatur anglice "candepisse".'

At first sight this passage would seem to imply that the commonly received opinion that Willis was the first to identify sugar in diabetic urine was wrong, and that its presence was commonly known in the fourteenth century. For *candi* (the question of *e* or *i* is of no moment) is constantly used by Gaddesden to mean some preparation of sugar or syrup, e. g. on ff. 67 v., 68 r. and v., 98 v., 128 v., and 171 r. But a reference to the MSS. shows that the word is a misprint and should really be *chaudepisse*. MS. Sloane 280 (Brit. Mus.) has *anglice chaudepisse*, Sloane 1067 has *gallice chaundepisse*, and Sloane 1612 has *gallice chandepisse*. Or (f. 168 verso, col. 1):

'Incipit liber 4tus de morbis particularibus.

Liber quartus erit brevis de prius omissis morbis qui sunt particulares; quia particulariter eveniunt non particularitate corporis tantum, sed particularitate temporis quia raro medicus lucratur pecuniam cum eis. Et sunt litargia, mania, desipientia, melancholia.'

It is to be feared that Gaddesden was somewhat mercenary.

He has a long section upon the care of the health in general which is mainly an expansion of the Regimen Sanitatis. But his remarks on the use of

fruit as a diet read oddly nowadays, and it is certain that he would have nothing to do with the modern 'Fruitarian'.

On f. 118 verso, col. 1, he says:

'The accustomed way of life should be observed unless it is very bad, and then it should be altered gradually. Therefore a way of life conformable to the "naturals" should be observed. If it only differ a little it may continue to be observed, but if much, then as I have said before it must be altered gradually.

Let him whose life is ill-regulated beware, for if it does not affect him in the present yet, as says Avicenna, it surely will in the future. And those who say that they eat often and to excess without any harm, let them have a care, for they will be struck down. Therefore should God punish at once whatever sin be committed, no man should live. And as with universal nature, which is God, so with particular nature in man, for punishment comes not at once, but in the course of time.

Again with fruits; some eat more of them than of other food, wherein they do not well, for all fruits make watery useless blood, and prone to putrefaction. But yet styptic fruits should be eaten after dinner by those who are inclined to looseness of the belly, and such are pears, figs (*coctana*), and apples. But these when roasted and taken by sufferers from the colic before dinner are laxative. When eaten raw, however, they are constipating, though not all equally, for the sweet are less so and the sour more. Prunes, cherries, raisins, and figs should be taken before dinner, as Isaac lays down in his book on particular diet. But the common way of taking them is the opposite of this, and that is bad, for the fig, owing to its flatulent qualities, stops up (the bowels), and

therefore ought to be eaten with ginger, for Avicenna notes that this drug is very opposed to all corruption of fruit. On the whole, however, it is best to do without fruit altogether, whence Galen in the sixth book of his regimen says that his father lived for one hundred years because he never ate fruit.

Again, in animals fit for food, some prefer the tail and others the head, some the bones and some other parts; whence the line "Pisces et uxores in cauda sunt meliores".

It is also said that there is least waste product in the tail of a fish ("piscis est cum minori superfluitate in cauda") because the tail is most in motion. Yet other parts are more easy of digestion, as is the case with the belly in salmon. That part, therefore, which is most in motion gives rise to least waste, wherefore that part in animals used for food is the best for man, *ceteris paribus*. That part, therefore, should be chosen, which is tender, is much in motion, and which tastes good, for *ceteris paribus* that part which tastes best nourishes best.'

There is, it is obvious, much sound common sense in the above passage, and the tincture of theology—Gaddesden, it must be remembered, held a theological degree—together with the somewhat free allusion to women, is due to the cast of mind so common in mediaeval times, to which was due the curious indelicacy of many of the carvings on the misereres in cathedrals. Whether Gaddesden held Pantheistic views or not may be left to theologians to say, but possibly the words 'Sicut est de natura universali quae est deus' might be taken to show such.[1]

[1] The words may only mean that he is conscious of the

It is possible that he may have been thinking of the following passage from Seneca, *Naturales Quaestiones*, ii. 45 :

'Ne hoc quidem crediderunt, Jovem, qualem in Capitolio et in caeteris aedibus colimus, mittere manu sua fulmina, sed eundem quem nos Jovem intelligunt; rectorem custodemque universi, animum et spiritum mundi, operis hujus dominum et artificem, cui nomen omne convenit : vis illum fatum vocare, non errabis : hic est ex quo suspensa sunt omnia, causa causarum : vis illum providentiam dicere, recte dices : est enim cujus consilio huic mundo providetur, ut inoffensus exeat et actus suos explicet: *vis illum naturam vocare, non peccabis :* hic est, ex quo nata sunt omnia, cujus spiritu vivimus : vis illum vocare mundum, non falleris : ipse enim est hoc quod vides totum, partibus suis inditus, et se sustinens et sua.'

The *Naturales Quaestiones* were much used in the Middle Ages as a textbook of physical science, although, as Mr. Mackail says, 'they are totally without any scientific value.' As regards 'the naturals' there were seven, and they will be found below in the translation of the *Ysagoge*, p. 137.

The chapter following that on health in general deals with colic, a complaint which seems to have been common in the Middle Ages, and one doubtless due to the quantity of salt meat which was eaten, as well as to the habit of cooking meat with an enormous quantity of flavourings such as ambergris together with sugar and fruits.

immanence of God, and might he not have been thinking of the Monologion of Anselm?

He commences by saying that the disease is called colic, 'quasi colon capiens,' and his second definition, for two are given, is, colic is an affection (*passio*) of the last part of the intestine, which is called the colon, accompanied by a difficulty in the outgoings of the contents (*substantia*) through the lower gut, together with great pain which is sometimes darting (*punctura*). There are seven causes of colic, and it is interesting to note that intestinal paralysis is apparently given as one of them. He gives them in verse as follows:

'Sunt colicae causae septem sub carmine clausae,
faex ignita, cibus constipans, flegmata grossa,
ventus, apostema, vermes, destructio sensus.'

Ignita is so written, but a few lines above he gives *Faex durata* as a cause.

He proceeds to discuss the difference between the iliac passion, the colic passion, and renal colic, and notes that the iliac passion was accompanied by frequent vomiting, by hardness of the belly, and by extremely acute pain as if a gimlet were boring through the intestine, and it would seem that under the names iliac or colic passion there were various forms of intestinal obstruction and possibly perforative peritonitis included. The iliac variety is specially fatal. As for cure there are two indications, the one to soothe the pain and the other to remove the cause of the disease. For this last seven things are necessary, of which the third is to obtain complete evacuation of the bowels; and here he quotes three

cases from Galen to show, as that great physician remarks, 'that the physician must not in these cases always go by contraries, but should weigh every case with intellect and judgement.' The last thing to be done in case other means fail is to try empirical remedies, and of these Gaddesden gives an enormous list, many of which are singularly nasty; but it will be remembered that even in the last century Waterton was a firm believer in the merits of a cow-dung poultice. He concludes his remarks by saying that if colic arises from a rupture of the intestine it must be reduced. Afterwards a bandage must be applied, which is to be worn forty days if possible, the patient's bowels being kept open by suppositories. Gaddesden's logical training is shown by the way in which he divides up the causes of diseases, thus (f. 123 recto, col. 1) 'the causes of stone are many, both material and efficient'.[1] Again (f. 44 verso, col. 2), 'Causae arteticae passionis sunt duplices interiores et exteriores,' or, sometimes they are called 'intrinsic and extrinsic'.

To sum up, the *Rosa Anglica* may be taken to give us a very fair picture of an English physician of the fourteenth century. We see therein a man of good general education and, as regards his medical education, one who was acquainted with the writings of his predecessors. More than this, he must have been an accurate clinical observer. Of

[1] These were two of the Aristotelian four causes, the other two being formal and final.

anatomy he naturally knew next to nothing, and of physiology even less. The book bears out the somewhat unfavourable estimate of the character of the leech which is expressed by Chaucer, by Langland through the mouth of Piers Ploughman, and by John of Salisbury, for Gaddesden appears to have been fond of his fees and by no means to have neglected the by-ways of medicine such as diet, cookery, and the care of the complexion or beautifying of the body.

Gaddesden was, moreover, fully possessed of ideas as to the dignity of his office, not unmixed with the notion common to 'medicine men' of all nations that medicine was in some way a mystery which should not be communicated to the uninitiated layman. He was evidently a man with a shrewd knowledge of the world and of the weaknesses of human nature, while his practice lay mainly among the upper classes; but that he had poor patients is shown by the fact that he frequently gives an alternative prescription, 'if the patient be poor.'

Considering the date of the book there is one rather curious omission. Although the *Rosa* is full of the beliefs and false pathology of the time, Gaddesden makes scarcely any mention of any astrological matters. In this he differs markedly from his notable contemporary John of Burgundy, who in his treatise *De Pestilentia* (Sloane MSS. 3449) lays it down as a necessity that those who presume to treat the plague should be well grounded

in the knowledge of the stars. But on the whole, despite the adverse judgements of Guy de Chauliac[1] and of Haller some three hundred years later, it is fair to say that the *Rosa Anglica* contains much that is sound and much that is applicable to disease at the present day even in the light of our present knowledge.

NOTE

The following is the passage from John of Burgundy's work upon plague in which he lays down the necessity for the physician having a knowledge of the stars :

JOANNIS DE BURGUNDIA DE PESTILENTIA LIBER.

Extract from Sloane MS. 3449, f. 6 :

'Also alle they whos complexion contrary to the aire that is chaunged or corupte abiden hole and elles alle folke shuld corupte and dye at onys. The aire therfore so corupt and chaunged bredith and engendreth in diverse sikenes and sores. After the variauncez or diversitees of theire humours for avery worcher or every thing that werchith performeth his werke after the abilite and disposicion of the matier that he werkith ynne. And by cause that ther have bene many grete maistirs and ferre lernyd in theoric or speculacion and groundly in sight of medecyne but they bene but litill proued in practik and therto allefully ignorant in the sience of Astronomy the whiche science is in phisik wonder nedefull as wittenessith ypocras in epidimia sua seying what phisician that ever he be and kan not astronomy no wyse man owt to putte hym in his handis for why astronomye and phisik rectifien yche other in effect and also that one science

[1] Guy's contemptuous note is as follows; it appears in the preface to his *Surgery* which was completed 1363: 'Ultimo insurrexit una fatua Rosa Anglicana, quae mihi missa fuit et visa; credidi in ea odorem suavitatis, et inveni fabulas Hispani, Gilberti et Theodorici.'

sheweth forthe many thynges hidde in the other alle thynges in thyng may not be declared. And I 40 yere and more have oftyn tymes proved in practise that a medecyn gyven contrary to the constellacion all thogh hit were both wele compownyd or medled and ordynatly wroght after the science of phisik yit it wroght nowther aftur the purpose of the worcher nor to the profite of the pacient. And when some men have gyven a medecyn laxatyf to purge downe ward the pacient hath casten it out ayene above all thogh he lothed it noght. Wherfore they that have not dronkyn of that swete drynke of Astronomye mowe putte to thise pestilentiall sores no perfite remedie for bicause that they knowe not the cause and the qualite of the sikenesse they may not hele it as seith the prynce of phisik Avicenna. How schuldest thou he saith hele a sore and thou knowe not the cause.

iij canone capitulo de curis febrium. He that knowith nat the cause hit is onpossible that he hele the sikenes. The comentour also *super secundum phisicorum* seith thus A man knowith nat a thyng but if he knowe the cause both ferre and nygh. Sithen therfor the hevenly or firmamentall bodies bene of the first and primytif causes it is bihovefull to have the knowlechyng of hem for yf the first and primytif causes be onknowen we may not come to know the causes secondary. Sithen therfor the first cause bryngeth in more plentevously his effecte than doth the cause secondary as hit shewith. *primo de causis.* Therfor it shewith wele that without Astronomye litill vayleth phisik for many man is perisshed in defawte of his councelour.'

As has already been mentioned Gaddesden says practically nothing about a knowledge of the heavenly bodies being necessary for a physician. In one place he refers to the phase of the moon, and that is in the section on Sterility (fol. 101 verso, col. 1):

'Ad 25m annum mulieribus plus veniunt menstrua in prima quadra lunae sed in senioribus veniunt in tertia vel quarta ipsius lunae. Et ideo puellis in prima quadra, juvenibus in secunda, senioribus post illud. Et ex hoc possumus scire quod juvenes debent flobotomari in nova luna et senes in antiqua et hoc senes a senectute; quia senes a senio non debent flobotomari via electionis, unde dicitur—

Luna vetus veteres, juvenes nova luna requirit.'

N.B.—Senectus lasted from 60 to 80. Senium lasted from 80 onwards (Joannes de Deo, Doctor Decretorum Bononiensis).

Arderne, who was Gaddesden's contemporary, although junior to him, gives elaborate tables for finding the house of the Moon in relation to operations. The passage is on p. 16 et seq. of Mr. D'Arcy Power's edition, E.E.T.S., Orig. Series 139, 1910. John of Burgundy is a mysterious and interesting personality. It is possible that he and Sir John Mandeville were the same person. Dr. Payne wrote to me in 1905: 'he is not mentioned, so far as I know, in the continental Histories of Medicine, and nearly all the MSS. are in English libraries.'

His treatise on the Pestilence, i. e. the Black Death of 1348, exists in many MSS., and there are numerous copies both in English and Latin in the British Museum and the Bodleian. He practised in Liege.

MSS. IN THE BRITISH MUSEUM LIBRARY OF THE 'ROSA ANGLICA'.

Three copies. Ref., Class Catalogue, Medicine, vol. i, p 73: Sloane 1612, Sloane 1067, Sloane 280.

Also, extracts from by Sir T. Browne, seventeenth century.

EXTANT MS. AT THE BIBLIOTHÈQUE NATIONALE OF THE 'ROSA MEDICINE' OF JOHN OF GADDESDEN.

Copié en 1356.

Il porte le no. 16643 dans le fonds des mss. Latins.

There are four editions (printed) in the British Museum of *Rosa Anglica* by J. of Gaddesden. Press-marks: (1) 5309. dd. i. 1492; (2) 543. g. 19. (2) 1502; (3) 7441. h. 16. 1517; (4) 542. a. 8. 9. 1595.

There is an interesting tract by Dr. George Dock, of Ann Arbor, Michigan, on 'Printed Editions of the *Rosa Anglica*'. It was originally printed in *Janus*, XII^{e} année, livraison viii, 1907.

OXFORD.

There are MSS. of the *Rosa*, and the Venice ed. of 1502 in the Bodleian, while Merton College possesses one;—

MS., No. 262 in Coxe's Catalogue and three printed copies: Pavia 1492, Venice 1502, Augsburg 1595.

CHAPTER III

THE MEDIAEVAL PHYSICIAN

It must always be remembered that the mediaeval physician derived his knowledge almost entirely from books. Sometimes, as in the enlightened kingdom of Sicily in the thirteenth century, a post-graduate course of instruction under an experienced physician or surgeon was prescribed before the newly graduated man was allowed to practise; and Mirfield, of whom Dr. Norman Moore has written, speaks of *Magister meus*; but in general book-learning formed the whole of his knowledge until the physician had been in practice for some time. Patients seem to have been aware of this, for Arnold de Villanova in his 'Cautels for medical men'[1] says: 'When you come into the patient's presence always do something new, lest they should say that you can do nothing without your books.' Hospitals other than leper hospitals were few and far between, and when they did exist were in no way places for medical teaching. The sick were 'cared for', but there was no provision for medical attendance.

Moreover, the mediaeval patient seems to have been in no way averse from trying to take in his

[1] *Opera omnia*, Basileae, 1585, col. 1454.

medical attendant, and the 'Cautels' above-mentioned, which are attributed to Arnold de Villanova who was born in the latter half of the thirteenth century, give an amusing picture of the possible relations between patient and physician. They commence by an account of the pitfalls into which a physician might fall during the inspection of the urine, this inspection being the chief method of diagnosis, a method which prevailed well into the seventeenth century. Not only was the physician supposed to be able to tell by this inspection the disease from which the patient was suffering, but also the sex and the age, and whether the urine was that of a human being or an animal. In a curious little work called *The Key to Unknown Knowledge, or A Shop of Fine Windowes*, printed so late as 1599, are contained five treatises, of which the first is entitled 'The Judgement of Urines'. The author withholds his name, but says in his preface that he has gathered together rules concerning the judgement of urine from divers authors for the benefit of his fellow Chirurgians 'which have not the Latine tongue'.

His fifth chapter gives the rules to know a beast's water from a man's, or from a woman's, and also the urine of a man from that of a woman. They are as follows:

'First it is meet that you know as I have afore said that a man's urine the neerer that you hold it to the eye, the thicker it does shew: and when you hold it further off, it appeareth more thin, and the further

the thinner and clearer it sheweth. But in beasts urine it is not so, for the more nie the eye the thinner and the further from the eye the thicker and more grosse : and this is (*sic*) shall not fail you.[1]

Also beasts water is more salt and of a stronger sauor, and more simple of complexion, and smelleth more raw, than the urine of a man. Also mix the water of a beast and wine together and they will depart each of them from the other. If it bee a cowes water which is with calfe, it shall be easie for you to know it from a womans urine that is with child ; for the dregs and the contentes shall be more grosse than the womans, and more foule for so much as the beast is of a fouler complexion. To know a mans urine from a womans understand that a mans in the casting does shew troublednesse in the middest of the urine : but you must note that in a womans it doth not so.

And after *Avicenna* the froth of the urine of a man after casting is long; and in the urine of a woman after casting it will be round.' [2]

Various conclusions were also drawn from the pellicle which formed on the surface, and from the 'circle' or layer of the urine which lay immediately under the 'spume'. Then the urine as it stood in the urinal was divided into regions, in each of which appearances were seen which would guide the practitioner. But however much 'Avicenna' and the older physicians believed in these appearances, Arnold was quite aware that most of them

[1] Cf. Avicenna, *Canon*, Bk. I, Fen. 2, Cap. 10, Theophilus, Lib. Urinar.

[2] *The Collectio Salernitana*, edited by S. de Renzi, contains numerous tractates on diagnosis by inspection of the urine.

were, to put it shortly, humbug, as will be seen from the following :

'Videndae sunt cautelae circa urinas quibus possumus nos cavere a deceptoribus.'

Firstly, the practitioner had to make certain that the fluid brought to him for inspection was that of a man. It might be of some other animal, or even not urine at all ; but the urine of the man could be recognized in four different ways.

Then the messenger bringing the urine must be fixedly looked at, 'tu enim debes ipsum fortissime respicere et renere[1] oculos fixos supra ipsum.' Under this close scrutiny the fraudulent messenger would either laugh or else change colour 'cui debes dare maledictionem perpetuam et aeternam'. It seems a heavy punishment for a comparatively harmless deception, but evidently mediaeval physicians had a full share of proper pride.

As for the sex of the patient it was ascertained as follows :

'The fourth caution is concerning the sex. The old woman will ask you to tell her, and then you must ask her from whom the urine is ("tu inquire cujus est"), then she will say "Don't you know?" Then you must look at her with a sidelong glance ("quodammodo oculo distorto") and say, "What business is it of yours?" Then if she is not very sly she will say, "It is Jack's or Jill's" ("dicit quod est cognatus vel cognata"), or something by which you may

[1] *Sic*, but probably a misprint for *tenere*.

ascertain the sex. If, however, she says, "Oh it doesn't matter to me," ask what the patient generally does when he is well, and so you will be able to tell or at all events make a very good guess at the sex.'

Other cautions follow, and then comes no. 7 which runs:

'The seventh is this, and it is perhaps one of very general application. Very possibly you gather nothing at all from an inspection of the urine; very well then, say that the patient is suffering from obstruction of the liver. Your visitor (i.e. the person who has brought the urine) will say, "No, Sir, it's his head or his legs or somewhere else"; then you must say; "Well that comes from the liver or the stomach." Be sure to use the word "obstruction", for they don't understand it, and it is often exceedingly useful that people should not understand what you say.'

Other cautions warn the young practitioner from being taken in by wine, or liquors made from figs or nettles, which are often substituted for urine. Caution 13 runs as follows: 'If the old woman asks what is the matter with the patient, say, "You would not understand if I were to tell you, and it would be much better if you were to ask, What am I to do for him?"

'Then she will see that you are right, and will hold her tongue. Possibly, however, she will say, "Sir, he is so hot that I think he has fever"; whereupon you answer, "That is always the way with you and other people who don't know the difference between fever and other diseases."'

Other cautions are concerned with the behaviour and 'bedside manner' of the physician; thus the sixteenth caution runs, 'When you come into the presence of the patient always do something new, lest they should say you can do nothing without your books.' And caution 17: 'If by ill luck you should find the patient dead when you arrive at the house and they say, "Sir, why have you come?" you must reply that you did not come because he was dead, for you knew very well that he would die in the night, but you wished to know the exact hour at which he died.'

After these worldly regulations it is somewhat surprising to find the following peroration, of which the following is a translation which but feebly reproduces the rhythmic cadences of the Latin.

'Mark that the leech shall be earnest in inquiry; careful and methodical in discourse; cautious and far-seeing in reply; guarded in prognosis; neither let him promise more than he can perform, and especially recovery. For then shall he thrust out God's work and do Him injury. But that he himself will be faithful and diligent, he may promise.

And he shall be discreet in his visits, painstaking in his talk, quiet in his ways, and kindly to the sufferer.'

The writer of these Cautelae, whether he was Arnold or no, simply developed them from a tract by an unknown writer (? Archimathaeus) which is entitled 'De adventu medici ad aegrotum', and which

is contained in the *Collectio Salernitana.*[1] This commences as follows:

'Cum igitur, o medice, ad aegrotum vocaberis, adjutorium sit in nomine Domini angelus qui comitatus est Tobiam; affectum mentis et egressum corporis comitetur.'

The meaning of this is obvious, but Arnold or his editor puts the passage thus, which makes it hopelessly obscure:

'Medice, cum ad aegrotum vocaberis, adjutorium sit in nomine Domini angelus qui comitatus est effectum mentis et egressus corporis concomitetur interius.'

Another similar tract is given by Renzi,[2] and in both the Salernitan tracts and in Arnold appear instructions as to how the medical man should behave when asked to dinner, together with a warning that he should not make love to the patient's wife or daughter, or maidservant.

It is interesting to compare the directions of our English surgeon, John of Arderne (*fl.* 1360), concerning the manners of the leech with those given in the *Cautelae.* They were written in Latin and were translated into English in the fifteenth century (Sloane MS. No. 6).[3]

[1] Salvatore di Renzi, Naples, 1859. *Collect. Salern.*, tom. ii, p. 75.

[2] *Collect. Salern.*, tom. v, p. 333.

[3] The latest edition is that by Mr. D'Arcy Power, edited for the Early English Text Society, Original Series No. 139, London, Kegan Paul, Trench, Trübner & Co., Ld., and Henry Frowde,

The Salernitan advises the leech to learn as much as he can from the messenger about the patient, 'ut quando ad ipsum accessieris, aegritudinis ejus non omnino inscius videaris ; ubi post visam urinam, considerato pulsu licet per eam aegritudinem non cognoveris, tamen si sinthoma quod praescriveras dixeris, confidet in te, tanquam in autore suae salutis, ad quod summopere laborandum est.' This excerpt shows somewhat the same spirit as Arnold's *Cautelae*, but the point is not so frankly put.

Fees in the Middle Ages were no more rapidly paid than now, and there are many passages in the Salernitan collection pointing out that the leech should press for his fee, or at least for an agreement to pay it, as soon as the patient was getting better; for ' Mox fugit a mente medicus morbo recedente '.

The following passage shows that our ancestors in the profession were quite awake to the necessity for getting their fees paid while the sufferings of the patient were still a vivid memory. They are from a version of the *Regimen Sanitatis* dedicated to

Oxford University Press, 1910. The passage in question will be found on p. 6 et seq. Very similar rules for conduct are laid down by Henry of Mondeville, *circa* 1320; William de Saliceto, *circa* 1275; and Lanfranc, *circa* 1295. Mr. Power quotes from the two former in his 'Forewords' to Arderne, while Lanfranc has been published in an English translation by the E.E.T.S., Orig. Series No. 102. Gaddesden does not mention this subject, neither does he lay stress upon the necessity for the leech to get his fee before the patient is well. In several places, however, he insists that the composition of medicine and methods of cure should not be revealed to the laity except for a due recompense.

Charlemagne who conquered (*sic*) the Saracens at Roncesvalle. The heading is:

De Prudentia Medici sumentis pro Labore.

Non didici gratis, nec sagax Musa Hippocratis
Aegris in stratis serviet absque datis.
Sumpta solet care multum medicina juvare
Si qua datur gratis nil habet utilitatis.
Res dare pro rebus, pro verbis verba solemus.
Pro vanis verbis montanis utimur herbis.
Pro caris rebus, pigmentis et speciebus.
Est medicinalis medicis data regula talis
Ut dicant 'da, da,' dum profert languidus, 'ha, ha.'
Da medicis primo medium, medio, nihil imo.
Dum dolet infirmus medicus sit pignore firmus.
Instanter quaere nummos, ut pignus habere.
Foedus et antiquum conservat pignus amicum,
Nam si post quaeris, quaerens semper eris.

From this passage it is evident that the mediaeval patient, like his modern successor, was not satisfied without being 'given something to take', for, says the writer, 'We are wont to give something in return for money, but for words we give only words,' a remark which he expands lower down into 'for words (i. e. verbal thanks) we give cheap medicines, but for a high fee we give rare and valuable medicines'.

As an example of the way in which a rich patient was treated it is worth quoting from a poem by Gilles de Corbeil, a noted physician who lived from 1140 to about 1220 and was physician to Philip Augustus.[1]

[1] A short account of him will be found in Croke's book on the *Regimen Sanitatis Salernitanum*, Oxford, D. A. Talboys, 1830.

They are from Book II, l. 68, a poem entitled 'Liber de Virtutibus et Laudibus Compositorum Medicaminum'.[1]

Si foecunda magis si rerum plena facultas,
Larga manus, praegnans loculus, si splendeat auro
Arca, vel argento niteat, domus ampla clientum
Ferveat obsequio, si deliciosa potentis
Plus aequo lasciva fames spoliare laboret
Divitiis elementa suis, si purpura corpus
Ambiat, aestivum digitis si fulguret aurum,
Electum gemmata merum si vasa propinent,
Si magnis se divitiis mens magna coaptet,
Aggravet hic medicina manum ; sumptus onerosos
Exigat ; hic positos debet transcendere fines.
Contundat gemmas molat aurum misceat ambram,
Balsama non dubitet propriis apponere causis,
Lignum aloes fervente mero desudet et illi
Se perdendo suum tribuat mandetque vigorem.
Jacturam redimit opulentia, cura salutis,
Hoc quoque, quod proprie geritur custodia vitae.

This may be broadly rendered :

'If the patient be a wealthy man in a high position, fond of display, and one whose life is spent in accordance with his possessions ; if, moreover, his heart is as large as his purse, then the medical man should come down with a heavy hand. Large fees should be demanded, for in a case of this kind the ordinary boundaries may be overstepped. For the medicine let gems and gold be ground up, let amber and the balsams appropriate to the case be added together with a decoction of aloes in wine. The wealth of the patient justifies the expense, as does his anxiety

[1] Quoted by C. Vieillard in his Gilles de Corbeil from Choulant's edition of the poem. The remainder of the quotations are from Leyser, *Hist. Poetar. et Poemat. Med. Aev*, Halae, 1741.

about his health, and the fact that the protection of his life is a matter of personal interest.'

Like his successor Gaddesden, however, Gilles de Corbeil is by no means unmindful of the poor man, whom he apostrophizes as Codrus (Book II, l. 91). Gilles had evidently read his Juvenal and Persius:

Quid faciet Codrus? Quid Codri curta supellex?
Cujus plebeia vacuus farragine venter
Non satis impletur, spasmum patiente crumena
Cujus opes modicis depicta sophismata cartis.

'But,' he continues, 'because you cannot afford such luxuries as the above in the way of medicine, is that any reason why your health should suffer? By no means; simple poverty possesses a medicine which can be bought for three farthings. Beans, a little fat, a cabbage and bread made from "Offals", when taken into the hungry stomach, purges all grossness from the body. Food flavoured by hunger is that which is best assimilated. What is a more certain cure of disease, what a better medicine, than the simple life, and that befitting a lowly establishment? Pure water and a humble way of life brings greater strength and longer life than the palace of Caesar or Falernian wine, or hunted game, or salmon, tunny, and the pink-fleshed trout; eaten at the feasts of kings, such things become a weariness to the flesh.'

Excellent advice, no doubt; but Codrus, like the patient of to-day, sometimes demanded more. He wanted 'a bottle'. Hence in another passage (Book II, line 725) Gilles describes a medicine called Diacostum, which was given both internally and externally for a splenetic tumour, without fever

arising from black gall. He then goes on to describe a poor man who sees himself utterly unable to afford this remedy, and who therefore abuses his physician, saying that he holds himself up as the craftsman and overseer of health, goes about covered with rings, and cares for no one but his rich patients :

> Ars tua divitibus solis, quibus ampla facultas
> Quos vanos trahit in sumptus opulentia rerum,
> Servit et optatae praebet solatia vitae.

When he talks of musk and balsam and other expensive drugs he is talking for Emperors alone, who care for nothing unless it is expensive, but the poor are shut out altogether, 'Sterilesque excludis egenos.'

After having listened to this complaint Gilles turns on the poor man, setting the key of his rebuke by his opening words, 'Stulte, quid exacuis vanis tua verba querelis?' He adds that what can't be cured must be endured; that it is no good to kick against the pricks; that envy is both judge and executioner, with a number of other aphorisms all very appropriate, if scarcely satisfying. A poor man must be content with his lot, and should remember that the forest offers him plenty of materials for restoring his health without anything to pay.

All this, however, is mere pose, for in the final section of the poem, which he oddly calls 'Prologus finalis', he gives the following admirable advice to young men and boys whom 'The delphic inspiration incited to the art of the physician'. They are not

to be impelled by greed, but kindliness alone, and divine love should urge them to give their service to the poor (Book IV, l. 1466 et seq.). There is no shame in a poor physician taking proper rewards for his skill, just as Horace took rewards from Maecenas. He continues (line 1481):

> At si dives eris, si magnis rebus abundans,
> Aegris pauperibus et munimenta medendi
> Largius impendas, ut subsidiaria vitae
> Dona pluas miseris, quo justior est medicinae
> Fructus et uberior; nulla ratione recuses
> Quae tibi nobilium ⟨donat⟩ praelarga virorum
> Munera nobilitas; sua namque repletio solvi
> Debet, ut ariditas foveatur pauperis aegri.
> Interdum minuendus erit pro paupere dives.

There is a word missing in line 1486. The sense obviously requires a word like 'gives', so I have supplied *donat*. It will be noted that the idea of bleeding the rich for the poor is not peculiar to modern Budgets. Gilles concludes his work with the old advice that patients pay more readily while they are still in pain. With patients of the very highest class (line 1494) no agreement for payment need be made beforehand; if the patient is generous he will pay generously, and if he is mean, then the very fact of having attended a great prince will pay the physician in renown and advertisement. Second-class persons, however, 'homines classique secundae Addictos,' should be strictly bound down to pay, 'Firmis vincire memento Pactorum laqueis.'

Mediaeval Quacks

The quack and the amateur practitioner were much the same in the Middle Ages as they are now, as is shown by the following verses from the *Flos Medicinae*:

Fingit se Medicum quivis idiota, prophanus
Judaeus, monachus, histrio, rasor, anus,
Sic[uti] Alchemista Medicus fit aut Saponista
Aut balneator, falsarius aut oculista
Hic dum lucra quaerit virtus in arte perit.

The quack or the *idiota* of the Middle Ages was in every way similar to his brother of the present day, with the sole exception that he did not pretend to use electricity or magnetism, for the very good reason that these forms of energy were practically unknown. Even the 'patter' was the same, as shown by the following passage from Rutebeuf:[1]

'Good people! I am not one of the poor preachers, nor one of those poor herbalists who go in front of the churches with their shabby ill-sewn cloaks, who carry boxes and bags and spread out (their wares) on a carpet, for they sell pepper and cumin and other spices.

'Know that I am not one of them, I belong to a lady whose name is Trote (i.e. Trotula) of Salerno, who makes a kerchief of her ears and whose eyebrows hang down as chains of silver behind her shoulders; and know that she is the wisest lady in all the four

[1] *Flos Medicinae*, pars x, civ.

[2] *Diz de l'erberie: Œuvres complètes de Rutebeuf*, Jubinal's ed. 1874, vol. ii, p. 58. Rutebeuf was a *trouvère* of the thirteenth century.

quarters of the world. And my lady sends us out into many divers lands and countries, into Apulia and Calabria and Tuscany and the Terre de Labour, and Germany and Soissoins and Gascony, Spain, Brie, Champagne, Burgundy, and the Forest of Ardennes, to kill wild beasts and extract ointments from them to give medicines to those who are bodily ill. My lady charged me strictly that into whatever place I should come I should say nothing but what would set a good example to my hearers, and because she made me swear by the Saints before I left, I will now learn you the cure for worms if you will hear me. Will you hear me?

'Is no gentleman here going to ask from what worms come? I will tell you. They come from cooked up meats and from wines in casks or bottle, so they grow in the body by heat and humours, for so say the philosophers all things are created, and they mount towards the heart, and then you die of a malady which is called sudden death. Mark you this well, and God guard you.

'And for the cure the best herb in all the world is ermoize. . . . In Champagne, where I was born, they call it Marreborc, which is as much as to say the mother of the herbs. Take three roots of this, five leaves of sage, three leaves of plantain, beat them in a brass mortar with an iron pestel, and drink the juice for three mornings running the first thing in the morning and you will be cured of your worms.

'Take off your hats, lend me your ears, and look at the herbs which my lady sends into this land and country; and because she wishes that the poor should be as well in the future as the rich, she told me to make pennyworths of them, for many a one has a penny in his purse who has not £5, and she said that I might take pennies of the money current in any land whither I may come, a Paris penny in

Paris, an Orleans penny in Orleans, a Chartres penny in Chartres, and a penny sterling in London which is in England, for good bread and wine for myself and for good hay and oats for my pack horse, and for anything else I may want to live. And if there be any here who is so poor or so lonely or hungry that he has nothing to give, let him come forward and I will give him one hand for the sake of God and the other for the sake of His mother. . . .

'These herbs, you will not eat them, for there is no ox nor no war horse, be they never so strong, but if they had a piece of these herbs on their tongues as big as a pea would presently die an evil death, for they are so strong and bitter, but what is bitter in the mouth comforteth the heart. Steep them three days in good white wine; if you have no white take red, if you have no red take brown, if you have no brown take fair clear water, for many a man has a well before his door who has not a cask of wine in his cellar.

'Take it the first thing in the morning for thirteen mornings; if you miss one take another, for there is no mystery about them; and I tell you by the passion of God that you will be cured from all disorders and disease, from quartan fevers, from gout. . . . And if my father and mother were in peril of death and were to ask me for the best herb I could give them I should give them these. This is how I sell my herbs and ointments; if you want them come and take them, if you don't want to, let them alone.'

It must be remembered that in some instances the quack's remedy was less nauseous and yet quite as efficacious as those of the orthodox practitioner. Take the following prescription from Gaddesden for the stone (*Rosa Ang.*, fol. 124 verso, col. 1):

'Habui unum calculosum quem per longum tempus non potui sanare, tandem feci colligi scarabaeos multos qui inveniuntur in stercoribus boum in aestate et cicadas quae cantant in campis et ablatis capitibus et alis de cicadis, posui illas cum scarabaeis in oleo communi in olla : tunc obturata olla posui hanc in forno in quo fuit tarde panis et dimisi ibi per diem et noctem : et extracta tunc olla ad ignem calefeci modicum et totum simul contrivi, et renes et pectinem inunxi et intra triduum cessavit dolor et lapis comminutus et fractus exivit.'

He also gave the patient 'fisticadary et fisticos sicut si esset panis'.[1] It is sad to say that so far as the crickets go this prescription is a shameless plagiarism from Arnold de Villanova.[2]

But in spite of their extraordinary remedies Gaddesden and other educated leeches of the time had at least studied medicine, in so far as any study was possible; they had read such books on the subject as were available, and we may believe that in general they would try to act up to the admirable advice contained in Arnold Villanova's works commencing 'Mark that the leech', which was quoted above. There was no General Medical Council or Medical Register in those days, but instead the law did protect practitioners who had obtained a medical degree or a licence to practise, and severe measures were meted out to the quack; for instance, in 1381 one Roger Clerk was attached before the Lord

[1] Fistici are pistachio nuts.

[2] Ed. Basil, *Op. Omnia*, 1585, p. 1269 D.

Mayor for pretending to be a physician and for having asserted that he could cure a woman. The cure consisted in making her wear a parchment with the well-known adjuration *Anima Christi* written therein. The woman did not get any better, and to the end that the people might not be deceived he was led through the City on a horse without a saddle, the said parchment round his neck and a urinal hung in front and another behind.[1]

The Popular View of the Medical Man.

It is plain, however, that the popular estimate of the 'qualified' leech in mediaeval times was by no means flattering, although the profession is not scoffed at in the same way as are the regular clergy, the friars, and occasionally the parish priests. These last, in England at any rate, seem to have won the affection of the populace, although a different story is told in Germany and Italy.[2] Some seven hundred years before the time of Gaddesden, namely in the year 600 A. D., Isidorus Hispalensis, who was Bishop of Seville, wrote a work called *Liber Etymologiarum*, which was an encyclopaedia of the knowledge of his time, and it naturally contained a chapter on medicine. In Book IV, cap. 4, of the edition printed in Venice in 1483 by P. Loslein, fol. 20 recto, col. 1, there is the following passage:

[1] H. Riley, *Memorials of London*, p. 466.

[2] See *Tyll Eulenspiegel*, the *Decameron*, and *Reynard the Fox*.

'Hi itaque tres viri totidem hereses invenerunt. Prima metodica inventa est ab Apolline, quae remedia sectatur et carmina. Secunda empirica, id est experientissima, inventa est ab Aesculapio, quae non indiciorum signis, sed solis constat experimentis. Tertia logica, id est rationalis, inventa ab Hippocrate. Iste enim discussis aetatum, regionum, vel aegritudinum qualitatibus, artis curam rationabiliter perscrutatus est. Empirici enim experientiam solam sectantur; logici experientiae rationem adjungunt; metodici nec elementorum rationem observant, nec tempora, nec aetates, nec causas, sed solas morborum substantias.'

In view of the connexion of Hippocrates with 'logical and rational' practice, it is noteworthy that in the two great mediaeval medical schools of Salerno and Montpellier, Hippocrates and Galen were the two authors whose works were especially studied. Salerno, indeed, was called Civitas Hippocratica; Montpellier, though commending the study of Hippocrates, seems to have held Galen in the greater esteem.

Isidore in cap. 13 of the same book lays down what was considered necessary for a physician of his day to know.

'It is sometimes asked why the art of medicine is not included among the other liberal arts. It is because they deal with single causes, but medicine with all. For a medical man should know the *ars grammatica*, that he may be able to understand and expound that which he reads; and the *ars rhetorica*, that he may be able to support with sound arguments the matters which he deals with; and also the *ars*

dialectica, so that by the exercise of reason he may investigate the causes of sickness for the purposes of cure. So too he should know the *ars arithmetica*, so as to calculate the times of the accession (of fever) and its periods; and he should be acquainted with the *ars geometrica*, so that he may teach what every man ought to consider with regard to different districts and the lie of different places ("qualitates regionum et locorum situs"). Moreover, he must know something of music, for many things can be done for the sick by means of this art, as we read that David delivered Saul from the evil spirit by means of music. Asclepiades restored a madman to his former health by means of a concord of sounds (*symphonia*). Lastly, let him have a knowledge of astronomy by means of which he may understand the calculation of the stars and the changes of the seasons. For as a physician says, our bodies are affected (*commutantur*) by their qualities, and therefore medicine is called a second philosophy; for either art arrogates to itself the whole man, since by the one the soul and by the other the body is cured.'

Nearly six hundred years later John of Salisbury, one of the leaders of mediaeval thought, who was born 1115–1120, who studied in France and was acquainted with Montpellier, wrote about the year 1159 a treatise called *Polycraticus, sive de nugis Curialium et Vestigiis Philosophorum.*[1] A chapter of this is well worth study on account of the views therein expressed of the medical profession as it appeared to a leading philosopher of the day. In the previous chapter he had written against those who consulted diviners and magicians, and the 29th

[1] Migne, *Patrol. Lat.*, vol. cxcix.

chapter opens as follows[1]:—Physicians by this time were divided into *theorici* and *practici*.

'And yet it is lawful for some one to be consulted about the future, as for instance in the case of any one who is full of the spirit of prophecy, or from the teachings of Medicine has learned the natural signs that may be expected to occur in animal bodies, or has drawn differences from past experience as to the conditions which will exist in the immediate future. To the latter, however, let no one lend an ear in so far as they may impugn either faith or religion.

'Neither are the former to be listened to except in so far as what they say is of the Lord and is in no way contrary to religion, for truth cannot be contrary to truth nor good to good. But the physicians, while they attribute too much authority to Nature, cast aside the Author of Nature, withstanding the faith.

'Not that I would charge them all with errors, although I have heard many of them disputing otherwise than faith would have it about the soul, its energies and working, about the growth and decline of the body, about its resurrection, and about the creation of bodies both natural and spiritual. Sometimes they talk about God Himself

"As if earth-born giants were to attempt the stars," and by their empty toil appear to be anxious to deserve the fate of Enceladus and to have placed upon them the fiery burden of Etna.

'In matters of this kind, however, it is easy to fall away, for however great be the natural parts, they are brought to a stand upon this side of the abyss of difficulty which is found in supernatural affairs.

[1] Joannes Sarisburiensis, *Polycraticus*, ed. Migne, cap. xxix, col. 475. Ioannis Saresberiensis, *Policraticus*: ed. C. C. J. Webb, vol. i, p. 166. Clarendon Press, 1909.

Where, then, the intellect fails, and the reasoning of faith is absent, that mental process which lies between the two, namely conjecture, alone remains. But when the matter under discussion is of an inferior nature, take for instance the physical constitution of the animal body, or the cause and cure of sickness, nothing is wanting to them, except the accomplishment of their work, if indeed that is what they desire.

'The theoretical physicians do what concerns them, and for love of you will even go further. You can get from them information as to the nature and causes of particular phenomena, they are judges of health, of sickness, and of the mean state. Health, so far as words go, they provide and preserve, and as concerning the mean state they bid one incline in the direction of health. Of sickness they foresee and declare the causes, and lay down its beginning, its continuance, and its decline. What more shall I say? When I hear them talk I fancy that they can raise the dead and are in no way inferior to either Aesculapius or Mercury.

'And yet with all my admiration I am much troubled at one matter, and that is they are so singularly at variance in their discussions and in the opinions which are drawn from them. For this one thing I do know, that contraries cannot both be true at the same time.

'Again, what shall I say about the practising physicians?

'God forbid that I should say anything bad about them! since for my sins I fall only too often into their hands. They should rather be soothed by politeness than angered by words, and I do not wish that they should treat me hardly, nor could I endure all the evils about which they constantly talk. I would rather say with blessed Solomon, 'All medicine is from the Lord, and he that is wise will not despise it.'

'Nor is any one more useful or more necessary than the physician so that he be faithful and full of foresight. For who can say enough in his praise who is the craftsman of health and the begetter of life in that he takes after the Lord and stands in his place, for that health which the Lord gives as a Prince, the physician, as steward and minister, administrates and dispenses.

'It is of little moment if some physicians sell an imaginary benefit, and that they may appear the more honest take no fee before the patient is well. But such are dishonest in that they give themselves the credit for a recovery which is due to time, or rather to the gift of God; for it is due to God and to the natural powers of his constitution that the sick man is raised up. Few are they who act in this way, for you will always hear physicians advising one another as follows:—"take your fee while the patient still feels ill."

'Personally I do not care much if their actions and advice are in opposition, for I know that contraries often produce the same effect. But if a patient of theirs should come near death they will put forward the most cogent reasons for showing that his life should be no more prolonged. And, too, it is said that for those whom they have broken down by long fasting and who are at the point of death they will provide absolutely useless broths and delicate meats. Perhaps you look for me to say, what the common people say, that physicians are the class of men who kill other men in the most polite and courteous manner. Well, you will be disappointed; God forbid that I should do them this injury! But if you want to hear them talked of in such a style I refer you to Seneca, to Pliny, and to Sidonius Apollinaris, who will fill your ears with discourses much to the point.'

The passage of Sidonius to which John of Salisbury

refers is as follows. It occurs in his letters, Bk. ii, letter xii, addressed to Agricola.

'Igitur ardori civitatis atque torpori, tam nos quam domum totam, praevio Christo, pariter eximimus, simulque medicorum consilia vitamus assidentum dissidentumque, qui parum docti et satis seduli languidos multos officiosissime occidunt. Sane contubernio nostro jure amicitiae Justus adhibebitur, quem, si jocari libet in tristibus, facile convincerem Chironica magis institutum arte quam Machaonica ; quo diligentius postulandus est Christus obsecrandusque ut valetudini, cujus curationem cura nostra non invenit, potentia superna medeatur.'

The subject of the letter is the health of his daughter Severiana, and he excuses himself from going fishing with Agricola on account of her illness because they are going to the country.

'Therefore,' he continues, 'we and our household, Christ being our leader, have left the heat and weariness of the City, and at the same time the opinions of the physicians, who attend us and contend with each other. For they have but little learning, and although they are assiduous in attention kill a large number of sick people in a most dutiful manner. But as a matter of friendship Justus (the physician) has joined our company, who, if I may joke at such a sad time, is, I would say, more skilled in the art of Chiron than in that of Machaon. And therefore Christ is to be most earnestly besought,

[1] 'Chironica magis quam Machaonica.' Messrs. J. F. Gregoire and F. Z. Collombet in their edition of Sidonius (Lyons and Paris, 1836) point out that by his remark Sidonius did not mean to depreciate Chiron's skill, but merely to pun upon the double meaning of χείρων as a name and χείρων meaning 'worse'.

that the divine power may restore that health which our care has been unable to bring about.'

As to Pliny, the passages referred to are evidently the opening chapters of Book xxix of the *Historia Naturalis*. They seem to have been a *locus classicus*, as to the idea held by laymen about medical men in the Middle Ages, for they were quoted by Petrarch in the excerpts given below.

The Seneca passage is to be found in the *De Beneficiis*, vi. 36 :

'Gravissima infamia est medici opus quaerere. Multi quos auxerant morbos et inritaverant, ut majore gloria sanarent, non potuerunt discutere aut cum magna miserorum vexatione vicerunt.'

The well-known lines of Chaucer concerning the Doctor of Physic must be quoted :

With us ther was a Doctour of Phisyk,
In al this world ne was ther noon him lyk
To speke of phisik and of surgerye;
For he was grounded in astronomye.
He kepte his pacient a ful greet del
In houres, by his magik naturel.
Wel coude he fortunen the ascendent
Of his images for his pacient.
He knew the cause of everich maladye,
Were it of hoot or cold, or moiste, or drye,
And where engendred, and of what humour;
He was a verrey parfit practisour.
The cause y-knowe, and of his harm the rote,
Anon he yaf the seke man his bote.
Full redy had he his apothecaries,
To send him drogges and his letuaries,

For ech of hem made other for to winne ;
His frendschipe was nat newe to beginne.
Wel knew he the olde Esculapius,
And Deiscorides, and eek Rufus,
Old Ypocras, Haly, and Galien ;
Serapion, Razis, and Avicen ;
Averrois, Damascien, and Constantyn ;
Bernard, and Gatesden, and Gilbertyn.
Of his diete mesurable was he,
For it was of no superfluitee,
But of greet norissing and digestible.
His study was but litel on the Bible.
In sangwin and in pers he clad was al,
Lyned with taffata and with sendal ;
And yet he was but esy of dispence ;
He kepte that he wan in pestilence.
For gold in phisik is a cordial,
Therfore he lovede gold in special.

In Langland's *Vision of Piers Ploughman* the Ploughman appeals to Hunger as follows :[1]

ȝet I prey ȝow ; quod Pieres · par charite, and ȝe kunne
Eny leef of lechecraft · lere it me, my dere.
For somme of my seruauntz · and my-self bothe
Of al a wyke worche nouȝt · so owre wombe aketh.

Hunger thereupon tells him that he has eaten too much, and that he should never drink without eating. Neither should he eat unless hungry, and ' Lat noȝt Sir Surfait sitten at thi borde '.

Hunger concludes his advice as follows (ll. 270–279) :
And ȝif thow diete the thus · I dar legge myne eres,
That Phisik shal his furred hodes · for his fode selle,

[1] Skeat's ed., Clarendon Press, 1886. B. Passus vi. l. 255.

And his cloke of Calabre[1] · with alle the knappes of golde,
And be fayne, bi my feith · his phisik to lete,
And lerne to laboure with londe · for lyflode is swete;
For morthereres aren mony leches · lorde hem amende!
Thei do men deye thorw here drynkes · ar destine it wolde.
'By seynt Poule' quod Pieres·'thise aren profitable wordis
Wende now, Hunger, whan thow wolt · that wel be thow euere
For this is a louely lessoun · lorde it the for-ȝelde!'

But perhaps the most remarkable and lowest estimate of physicians is that to be found in the works of Petrarch, 1304–73.

He had a hatred of physicians, and wrote four books of Invectives against them, and from the Venice edition of his works, dated 1503, Brit. Mus. Catalogue 11421, K. 13, I have extracted the following passages. No. 1 is a letter to the Pope, which serves as the origin of and preface to the four books of Invectives. No. 2 is from the first book, and No. 3 from the second book.

Apparently it was the universal mediaeval tradition that medical men were always pale.

'A letter of Franciscus Petrarcha, the most eminent poet and orator to the Roman Pontiff Clement VI, exhorting him to avoid the mob of medical men. And the abuse which medical men poured upon him

[1] *Calabre*, a grey fur from Calabria, the belly of which was black. *Knappes* are knobs, or buttons.

on this account gave rise to the four books of Invectives which he afterwards wrote.

(1) 'The news of your fever, Your Blessedness, made me shudder with horror in all my limbs. I do not say this out of mere politeness, nor like him of whom the satirist says,[1] "He weeps if he sees his friends cry," or again, "If his friend says 'I am hot' he sweats at once"; but rather I follow his example, of whom Cicero tells us, who was anxious about the health of the Roman people because he saw that it involved his own. For not only my own well-being but also that of many is founded on yours. My fear, therefore, is no pretence, neither am I anxious about another's danger, but about my own, for all we who depend upon you, and whose hope is in you, may appear to be well when you are sick, but we are not so.

'Because, therefore, in this matter, any discourse which is poured forth from a human mouth into divine ears should be short, I, who am lowly in mind and of a reverential spirit, will be brief.

'I know that your sick bed is continually besieged by physicians, a fact which is my chief cause of terror, for they disagree of set purpose, and even he who can bring forth nothing new is ashamed to follow in the footsteps of another.

'Neither is there any doubt (as Pliny gracefully says) that they are always hunting after renown for some novelty and so traffic in our lives. Also in this art alone does it happen that a man is taken at his own valuation, and that any one who holds himself out as a physician is at once accepted as such; but although in no form of fraud is there greater danger, yet we do not regard it, so great is the attraction of a man's own particular delusion. Besides there is no

[1] Juvenal, iii. 100 et seq.

law to punish human ignorance, no exemplary capital penalty;[1] they learn by our danger and gain experience through our death. The physician alone can kill a man with absolute impunity.

'Remember, therefore, most gracious Father, the epitaph of that unhappy man who ordered nothing to be inscribed upon his tomb but "I died from a mob of physicians", and let the memory turn your attention from that mob which like an enemy's host (now surround you).

'The prophecy of M. Cato the elder seems to apply especially to this our own time, namely that whenever the Greeks should hand down to us their learning, and above all their medical men, they would corrupt all things.

'In the present day, however, we do not venture to live without physicians, although unnumbered mighty nations live very much more happily and healthily without them than we do, to say nothing of the Roman people who flourished exceedingly, as Pliny says, for more than six hundred years.

'Therefore I implore you, choose one out of the many who surround you, not on account of his eloquence, but as being conspicuous for his knowledge and trustworthiness; for now, forgetful of their own profession, they have dared to come forth from their lairs and seek the grove of the poet and the rhetorician's field of action, and, not with any idea of healing, but merely to gain a dialectical advantage, they surround the beds of our unhappy sick and dispute with mighty bellowings.

'Moreover, when the sick are dying, though the end be unfortunate they give themselves airs by tangling up Hippocratic problems in a web of Ciceronian oratory. ("Hippocraticos nodos Tulliano stamine

[1] Pliny's words are 'capitale nullum exemplum', but Petrarch omits the *capitale*.

permiscentes, sinistro quamvis eventu superbiunt") ; nor do they brag about the efficiency of their remedies and treatment, but only of the empty prettiness of their language.

'Lest any one of your physicians should say that I am inventing, I have rested my arguments nearly all through this letter upon him whom I so often quote, namely Pliny, for he constantly mentions medical men, and speaks of them more often and more truly than any one else. Let them therefore hear him. It is obvious, he says, that any one among them who has a fluent tongue (*loquendo polleat*) on that account becomes master of our life and death. But my pen has carried me far beyond the limits which I had set myself, so let me here make an end, by telling you to shun a physician who is eminent not for his knowledge but solely for his powers of speech, as you would a lurking assassin or a poisoner.'

(2) 'In this point, too, we disagree, in that you say that the performances of medical men are wonderful. What performances, I ask you, unless you reckon this among the miracles, that you among all classes of men are nearly always ill. And so among large populations one can always tell your complexion by its pallor.'

In cap. 18 of Bk. ii he enlarges upon this point in the following words. I have not translated them, for they require the pen of a Swift to do them justice.

(3) 'Ostendam tibi ego, qui non sum medicus, et logica careo, palloris tui causam, quam veram esse senties, vel invitus. Is per loca atra, livida, foetida, pallida. Undantes pelves rimaris, aegrotantium urinas adspicis, aurum cogitas. Quid igitur miri est, si tot circum pallidis, atris ac croceis, ipse quoque sis

pallidus, ater ac croceus ? Et si grex ille providentissimi patriarchae colorem traxit, objectu virgarum variarum, quid novi accidit, si tu quoque—expectas, ut ab auro dicam. Immo vero ab objectis. Multum distuli, ac libentius tacerem, sed materia verum nomen exigit, quodsi saepe in libris sacris est, semel in his scriptum tolerabitur : ab objectis inquam, stercoribus, et colorem, et odorem traxeris et saporem.'

In connexion with the phrase 'et logica careo' it is interesting to note that logic was laid down as being necessary for a medical man in the decree of Frederick II quoted above.

The regulations for the duties of the medical man, and the fee which he was allowed to charge, were laid down in the statute of Frederick II *De Medicis*, a portion of which has been already referred to at p. 21. The remainder deals with fees, &c., and is as follows:— Every physician was to visit his patients at least twice in the day, and at the request of the patient once at night. His fee, within the City, was not to be more than half a gold tarenus [1] or, if outside the City, three tareni and his expenses, or four tareni if he paid his expenses himself. He was not to be in partnership with an apothecary, or to undertake a cure for a fixed sum, or to keep an apothecary's shop. Apothecaries were to compound their drugs at their own expense, which was to be certified by a medical man, and were to take oath that they would compound them according to the prescribed forms. Simple

[1] A tarenus was a gold coin weighing twenty grains, which would now be worth four shillings and twopence.

drugs which were not kept in stock for more than a year were to be sold at three tareni an ounce. Others might go to six tareni.

De Medicis Lib. iii, Tit. xlvi.

'Iste medicus visitabit egrotos suos ad minus bis in die et ad requisitionem infirmi semel in nocte, a quo non recipiet per diem si pro eo non egrediatur civitatem vel castrum ultra dimidium tarenum auri. Ab infirmo autem quem extra civitatem visitat, non recipiat per diem ultra tres tarenos cum expensis infirmi vel ultra quattuor tarenos cum expensis suis. Non contrahat societatem cum confectionariis nec recipiat aliquem sub cura sua ad expensas pro certa pretii quantitate, nec ipse etiam habeat propriam stationem. Confectionarii vero facient confectionem expensis suis cum testimonio medicorum, juxta formam constitutionis nostre, nec admittentur ad hoc ut teneant confectiones nisi prestito juramento: omnes confectiones suas secundum predictam formam facient sine fraude. Lucrabitur autem stationarius de confectionibus suis, secundum istum modum: de confectionibus et simplicibus medicinis quae non consueverunt teneri in apothecis ultra annum a tempore emptionis, pro qualibet uncia poterit et licebit tres tarenos lucrari. De aliis vero quae ex natura medicaminum vel ex alia causa ultra annum in apotheca tenentur, pro qualibet uncia licebit lucrari sex tarenos. Nec stationes hujusmodi erunt ubique, sed in certis civitatibus per regnum ut inferius describitur.'

Anatomy and the Decree of Pope Boniface VIII.

It has frequently been stated that anatomy was looked upon by the Church with horror, and that the practice of dissecting human bodies was prohibited

by a Decree of Boniface VIII. The study of human anatomy was, however, if not encouraged, at least not prohibited, for Mondinus, *circa* 1300, used to study human anatomy by dissection, and, as has already been mentioned, the Emperor Frederick II ordered that all surgeons should undergo a course of human anatomy before being allowed to practise. The decree of Pope Boniface dealt with an entirely different matter. The practice against which the decree was issued was that of boiling down corpses on the battlefield, so that the bones might be brought home for burial. This custom obtained in the army of Barbarossa and also in the Crusades. Probably the decree was taken to forbid the mutilation of human bodies for any purpose other than punitive, but the original intention had nothing to do with learning (Appendix C). Even vivisection of human beings was not unknown both to surgeons and laymen of an inquiring turn of mind.

Salimbene, in his Chronicle, tells the following tale of the Emperor Frederick II :

'He fed two men most excellently at dinner, one of whom he sent forthwith to sleep, and the other to hunt; and that same evening he caused them to be disembowelled in his presence, wishing to know which had digested better, and it was judged by the physicians in favour of him who had slept.'[1]

In a recently published work by the same author,

[1] Coulton, *From St. Francis to Dante*, Duckworth & Co., 1908, p. 243.

a perfect storehouse of mediaeval lore,[1] is the following story translated from the 'God's dealings' of Guibert de Nogent, col. 798; Guibert de Nogent was born 1053, and became Abbot of Nogent sur Coucy. He died about 1123.

'Baldwin (afterwards King of Jerusalem) had been wounded in battle while he rescued a foot soldier of his army with whose bravery he was much delighted. The leech whom he summoned feared in his foresight lest the cataplasm outwardly applied might film over the wound, which, as he knew, had pierced deep into the prince's body; he feared, therefore, lest, while the skin grew smooth over the wound, it might rankle inwardly with a mass of putrid matter. This he foresaw in his wondrous skill, partly by a most praiseworthy conjecture, and partly from past experience. He therefore besought the king to command that one of the Saracen prisoners (for it would have been wicked to ask it of a Christian) should be wounded in that same place and afterwards slain; whereby he might inquire at better leisure in the dead man's body, nay, might clearly perpend from its examination how it was with the king's wound at the very bottom.

'From this, however, the prince's lovingkindness shrank in horror; and he repeated that ancient example of the Emperor Constantine, who utterly refused to become the cause of any man's death, even of the basest, for so small a chance of his own safety. Then said the doctor: "If indeed thou art resolved to take no man's life for the sake of thine own cure, then at least send for a bear, a beast that is no use but to be baited; let him stand erect on his hinder paws with his fore feet raised, and bid them thrust

[1] Coulton, *A Mediaeval Garner*, Constable & Co., 1910, p. 55.

him with the steel; then by inspection of his bowels after death, I may in some degree measure how deep that wound is, and how deep thine own."

'Then said the king: "We will not strain at the beast, if need be, do therefore as thou wilt." Whereupon it was done as the leech bade; and he discovered from the proof of the wild beast how perilous it would have been for the king if the lips of the wound had become united before the matter had been drawn forth and the bottom had grown together. Let this suffice concerning the king's pitifulness.'

The Saracen captive was certainly fortunate in not being a prisoner of Frederick II.

CHAPTER IV

OPPORTUNITIES FOR THE STUDIES OF MEDICINE IN OXFORD IN THE FOURTEENTH CENTURY AND PREVIOUSLY

INFORMATION as to a teaching School of Medicine in Oxford during and before the fourteenth century is scanty in the extreme. The tradition as to a School of Medicine 'which we find established in the twelfth century', and 'which can hardly have been other than Jewish',[1] has, despite the authority of Mr. C. W. Boase and Mr. J. R. Green, apparently no foundation in fact. Neubauer[2] quotes Boase's statement in what may be called a negative manner. As my own knowledge on the matter was next to nothing, I was forced to apply to those who had much, and I wish to record in this place my gratitude to them for their kindness and help. Mr. I. Abrahams, Reader in Rabbinical Literature at Cambridge, wrote, 'I do not believe myself in a Jewish Medical School at Oxford in the Middle Ages.' Mr. J. M. Rigg, of Lincoln's Inn, says that his researches into mediaeval Jewish History have

[1] *Historic Towns: Oxford; Short History of the English People.*

[2] 'Notes on the Jews at Oxford,' Oxford Hist. Soc., *Collectanea*, 1890, vol. ii.

in no way tended to confirm the statement. Neither the late Professor Steinschneider of Berlin nor Mr. A. Weiner of London believed in the School, and finally Dr. R. L. Poole says that he does not believe that there is any evidence for a School of Medicine at Oxford, either Jewish or Christian, at the date mentioned.

There is, however, evidence of medical *teaching* at Oxford before A. D. 1200, for Robert Grosseteste, afterwards Bishop of Lincoln, had while at Oxford, which he left on the first occasion before 1200, acquired sufficient medical knowledge to be physician to the bishop. At a later date, Adam de Marisco, writer to Grosseteste, about the year A.D. 1250 says :

'Cum venissem ad Oxoniam . . . locutus sum etiam cum magistro Reginaldo de Stokes, medico, viro maturo et honesto, in artibus et in medicina provecto et experto, quem et conversatio socialis, et circumspecta discretio, et sermo maturus, et timorata devotio, juxta fide dignorum assertionem, plurimum reddit acceptum.'

He goes on to advise that Reginald be taken into the Bishop's service.[1]

That there were leeches (*Medici*) in Oxford in the twelfth century is evident from a story given by Dr. T. E. Holland[2] concerning the cure of a student, date *circa* 1180. The passage is taken from the *Acta Sanctorum*, Octobris, t. viii, p. 579, being

[1] *Monumenta Franciscana*, vol. i, p. 113 ; Rolls Series.

[2] Oxford Hist. Soc., *Collectanea*, vol. ii, 1890. 'The Twelfth Century University.'

a portion of the *Historia Miraculorum Sanctae Frideswidae Virginis, cum prologo, per Philippum ejusdem Monasterii Priorem*:—

'Morabatur eo tempore apud Oxenefordiam, studiorum causa, clericus quidam Stephanus nomine, de Eboracensi regione oriundus, aetate juvenili floridus, et elegantia formae praeclarus. Is febre cotidiana correptus, ad medicorum confugit auxilium, inanibus se sumptibus eviscerans, languoris acerbitate singulis ingravescente diebus. Ad divinum igitur, tanquam ad ultimum, cum jam deficeret humanum, convolavit adjutorium, et cum jam, nimia macie confecta, vix sibi membra cohererent, oculis liventibus, facie pallida, Virginis gloriosae patrocinium implorabat. Mox itaque, ut aquae benedictae poculum hausit de cetero febrilis fatigatio conquievit. Et redeuntibus paulisper viribus in brevi ad plenum convaluit.'

Prior Philip succeeded his predecessor in 1180, and in the first year of his office translated the remains of the Saint, whereupon many miracles happened.

Whether the *medici* upon whom poor Stephen wasted his substance, with the same results as did the woman with the issue of blood mentioned in the Gospels, were Jewish or Christian there is no record, but this is the earliest record of leeches in Oxford that I have been able to find. There were, however, two medical or quasi-medical charities founded *circa* the twelfth century, one being a hospital for lepers dedicated to St. Bartholomew and the other the Hospital of St. John Baptist which was just outside the East Gate, but these will be more conveniently

dealt with when considering the question of what opportunities Gaddesden may have had of learning his profession.

The medical books which he was probably obliged to have read or heard before supplicating for his degree[1] have already been mentioned, but a study of the *Rosa* reveals the fact that he had read, or was acquainted with, a large number of authors, and, moreover, with the most recent medical works, for he quotes Bernard of Gordon, who began his *Lilium Medicinae* in 1305. A complete list of the authors quoted or referred to by Gaddesden will be found in the Appendix; some of them, chiefly Arabic writers, cannot be identified.

As to the medical works existing at Oxford in the time of Gaddesden there is but little information. The list of authorities whom he quotes shows that he was a man of wide reading in medical matters, so that he must have had access to books; but as to where he read them there is no record. One of the earliest Oxford Library Catalogues extant is that of Oriel College, 1375.[2] But in this there are no medical works, the only books mentioned which may be said to have any connexion with medicine being two copies of Aristotle's *Liber Naturalium* and one of his *Liber de Generatione.*[3]

[1] 'Probably,' for the date of the earliest MSS. from which the statutes are taken is not earlier than 1350, and most are much later.

[2] O. H. S., *Collectanea*, vol. i, 1885.

[3] This may mean either de Generatione et Corruptione, or de Generatione Animalium.

William of Wykeham gave a large gift of books to his College of St. Mary of Winchester in Oxford, alias New College, and the catalogue of them will be found in the third volume of the *Collectanea* of the Oxford Historical Society, in an article by Mr. A. F. Leach. Among them are a number of medical books given under the heading of 'Libri Facultatis Medicinae'; but the list, says Mr. Leach, is in another, and apparently later, hand than the other lists, and whether they formed part of Wykeham's gift is uncertain. The list is in two parts, the first of which contains the books which might be taken out, while the second gives the books which were chained in the library.

The authors in Part I are Galen, Nicolaus, Bartholomaeus, Rhazes, Averrhoes, Hippocrates, Gilbertus Anglicus, and Gerrardus.

In Part II the authors are Galen, Averrhoes, Avicenna, Mesue, Benvenutus Graphoeus, Gilbert, a Commentary by Joannes Alexander upon the *Epidemica* of Hippocrates, Bernardus, Gerardus, Dioscorides. There are two copies of the *Rosa* and another book apparently by Gaddesden entitled *Super aff.*, of which nothing is known. *Super aff.* might mean either 'super affectibus', or 'super afforismis'.

In another article, 'Some Durham College Rolls,'[1] by the Rev. H. E. D. Blakiston, a list of books is given in a roll dated 1315, and in this roll are the

[1] O. H. S., *Collectanea*, vol. iii.

following books, which are either medical or have a bearing on medicine: *Liber Naturalium; Questiones super naturalia et logicalia; Notule super librum de plantis et super librum celi et mundi et recapitulaciones libri Metheororum et Phisicorum; Exposicio Thomae de Aquino super libros phisicorum; Libri Naturales Avicennae et Algazel; Ysidorum* (*sic*) *ethimologiarum.*

Books in the Middle Ages were, as a rule, the property either of corporations or of rich folk, and the regular corporations, such as the great abbeys, were far richer in literary treasures than were secular corporations such as the University of Oxford. It is probable that Gaddesden may have studied some of the authors whom he quotes in the libraries of Oseney Abbey, or St. Frideswide's Abbey, and as the King's physician he would be in a better position for obtaining access to libraries than an ordinary layman.

How valuable and varied was the collection of books in the library of a great religious house may be seen by the catalogues of the ancient libraries of Canterbury and Dover, which have been printed by Dr. Montague Rhodes James (Cambridge University Press, 1903). The catalogues are those of Christ Church Priory in the time of Henry of Estry, who was Prior from 1284 to 1331, and so a contemporary of Gaddesden; of St. Augustine's Abbey, drawn up about the end of the fifteenth century; and of Dover Priory, compiled in 1389.

There are medical books in all three catalogues; St. Augustine's catalogue contains over 230 treatises, that of Christ Church nearly 300, and that of Dover Priory about 120. St. Augustine's catalogue contains the following authors not quoted by Gaddesden: Alguensid, Quintus Serenus, Macer, Genesius, Maurus, Trotula, and Costa ben Luca. It is possible that the Alguensid of the catalogue may be the Alguasinus of Gaddesden. Most of the authors quoted by Gaddesden were in the library, and it was particularly rich in the works of Constantine and in copies of the *Ysagoge* of Joannitius.

The Christ Church Catalogue contains the Aphorisms of John Damascene, an author unrepresented in St. Augustine's library, and also at least three copies of his *Ysagoge ad Tegni Galeni.* This book apparently is not a confusion on the part of the scribe with the far better known *Ysagoge ad Tegni* of Joannitius, for in vol. 448 the two are bound up together (James, *op. cit.*, p. 56). But the most interesting items in the catalogue are those dealing with the books given by Magister Robertus de Cornubia, Medicus, vols. 1706–14 (p. 138); they are: *Duo primi libri Avicennae; Novi tractatus Johannis Mesue cum practica averois de medicina cum questionibus super uiaticum; Practica Gilberti; Libri Originales Ypocratis et Galieni; Scripta Magistri Thedei cum quibusdam aliis contentis; Viaticus Constantini cum Commento; Liber Hali de regali dispositione.*

Gilbertus (Anglicus), the latest in this list of authors, flourished early in the thirteenth century, so that Robert the Cornishman was probably nearly a contemporary of Gaddesden, and we may rightly imagine that Gaddesden might have had a similar or even superior private library.

Among the authors not quoted by Gaddesden which are found in this catalogue are Matthesus Ferrarius de febribus; Geraldus, *de dandis cathar-ticis;* Alfanus Salernitanensis; Genesius; Soranus; Pliny, and Bartholomaeus. There are also two treatises by Alexander Sophista. The one treatise is called *De Medicina omnium membrorum humani corporis,* and the other *De curis humani corporis.* The remaining medical works are mostly standard authors such as Galen, Hippocrates, Egidius (Corboliensis), Constantine, Philaretus, Theophilus (the last two are probably the same person), Platearius, and the *Antidotarium* of Nicolaus.

The medical works in the Dover Priory catalogue are in many instances those of quite unknown authors. It is true that there are works by Joannitius, Hippocrates, Galen, Razes, Trotula, Nicolaus, Platearius, and Gilbert, but the catalogue also contains such books as *Medicinale ffulberti*, *Medicinale medici ēc*, and *Practica Alexandri Nicholai*, all three of which are briefly annotated by the compiler of the catalogue John Whytefeld, as *Mostardyer*. Dr. James suggests that this means that the books were so dilapidated that they were only fit for wrapping up mustard.

From these three catalogues, therefore, it is possible to form a very good picture of the facilities for reading medicine which any enthusiastic medical writer of the fourteenth century could obtain.

It is not, however, unreasonable to suppose that Oxford possessed single copies at least of the same medical works as were at Montpellier. A list of these which were in use 1309–1340 can be found in Hastings Rashdall, *Universities of Europe*, vol. ii, pp. 2, 780. The fame of Montpellier as a medical University was, of course, far superior to that of Oxford, for the number of medical Doctors at Oxford was always small. Books, however, despite the difficulties of reproduction, must have been diffused with amazing rapidity in the Middle Ages, and as Oxford had a Faculty of medicine that Faculty probably possessed some books, even before the New College bequest.

Duke Humphrey's library contained a number of medical books, but the date of his bequest, 1439, was over a hundred years after Gaddesden's period of study.

What opportunities for study had the student of medicine in Oxford apart from books? There were at least two endowed hospitals where poor sick people were cared for, or at least which had been founded to that intent. One was the hospital of St. Bartholomew founded by Henry I, 1100–1135, and the other the hospital of St. John Baptist founded either by King John, 1199–1216, or more likely by Henry III in 1233.

Concerning St. Bartholomew's, it stood[1] 'on the east side of Oxon, a quarter of a mile distance from St. Clement's.' In those days St. Clement's Church stood at the east end of the bridge which is now Magdalen Bridge. Here Henry I erected a chapel to the memory of St. Bartholomew, being guided perchance in his choice of a saint by the thought of the great house just founded in London and some edifices adjoining for leprous folk. The house, however, fell on evil times in the reigns of Edward I and Edward II, it being so poor that the original foundation of twelve brethren was reduced to six by Edward I. His successor would have restored it, but in 1321 a report arose that the leprous folk in transmarine parts had at the instance of the Saracens 'poisoned the fountain of sweet gliding streams . . . Then were they upon shrewd suspicion of the same fact in England utterly hated and their hospitals brought for the most part to great decay.'[2]

It is not very likely, then, that during the time when Gaddesden was studying medicines there were many patients in the hospital for him to see. If there were any it is extremely likely that they included certain cases of chronic skin diseases besides those of true leprosy. The word *lepre* or *lepra* was probably used in an elastic sense. In '*The Governayle of Helthe*', ascribed to John of Burgundy and printed by Caxton, is the following note: 'And know

[1] A. Wood, *City of Oxford*, ed. Clark, Oxford Hist. Soc., vol. ii, 1890.

[2] Wood, loc. cit.

when thou wolte and note it for a souveraigne notability who that eateth oft milk and fish, oft catch thereof a lepre or a white scab.'[1] If *lepre* here does mean 'leprosy' the passage is interesting as regards a certain controversy concerning fish and the question of tuberculous infection by milk.

The other endowed hospital, that of St. John Baptist, stood about where now stand the tower and the kitchen buildings of Magdalen College. There was a religious house of the name founded by King John,[2] but, continues Wood, 'We will according to most authors take King Henry III to be the founder and not the rebuilder.' The foundation charter is dated 1231. But among the Bodleian MSS. is a fifteenth-century copy of the statutes,[3] and at the end of the statutes comes a paragraph stating that they were 'confirmed by the Venerable and most holy father Innocent, at the petition of the illustrious King of the English, Henry III, who was the founder of this hospital. Given at Avignon the tenth of the Kalends of April in the third year of his Pontificate. At that time was Hugh made Bishop of Lincoln'.

The dates are confused: the third year of Innocent IV was 1246, i. e. the thirtieth to the thirty-first year of Henry III. But the great St. Hugh was Bishop of Lincoln from 1186 to 1200; Hugh of Wells was

[1] This statement is found in Avicenna.
[2] Wood, op. cit., p. 520.
[3] Press mark in 1911; MS. Top. Oxon. d. 8.

bishop from 1209 to 1235. The scribe may possibly have been thinking of 'Little St. Hugh of Lincoln', whose date is traditionally 1246–55.

Whatever be the date of the statutes, it is evident from them that the hospital was primarily a religious house. The officers were three, a Master, a Steward (*celerarius*), and a Sacristan. The Master was to be chosen by the brethren, and had to exercise a general supervision over the inmates, but he was to show no favouritism: 'Equalis caritas dilectionis debetur omnibus.' The Steward, whose duties were in some ways the most onerous, had among other things to look after the welfare of the sick poor 'guests' who came to the hospital: 'Omni sollicitudine curam gerat infirmorum pauperum hospitum supervenientium.' The duty of the Sacrist was to look after the choir (*chorum regens*), i. e. not merely the singers, but the building, the books, the music, and to see that the proper offices were duly sung. He also had in his charge all the ornaments of the church. In addition, as to him was committed the charge of the infirmary, the statutes proceed: 'We ordain and definitely command that he shall hear the confession of any sick person seeking admission before that he be admitted. If the infirm be adults, none of the following shall be admitted: those suffering from leprosy, paralysis, dropsy, mania, epilepsy, fistula, or incurable diseases. Neither shall any pregnant . . . woman (*mulieres . . . praegnantes*) nor young girl be admitted. For these should rather have outdoor relief, if they

are in need as well as ill, until they shall be well again.'

The statutes also contain rules for the admission and conduct of the brethren and sisters of the house, and the oath which they took on the gospels ran as follows: 'I vow to Almighty God and to St. John the patron of this church, that I will live honestly and chastely according to the statutes of this house, and that I will serve the poor as I should in the said house: so help me God and these holy Evangels.'

The statutes show that the hospital was in the main a religious house. As for the patients, they would seem from the passage just quoted to have been limited to those suffering from acute disorders such as fevers and other pyrexial complaints, for the class of case mentioned as forbidden admission includes most chronic disorders. The *leprosi* probably meant any skin disease; *paralitici* ruled out all old hemiplegias and many diseases of the spinal cord; *ydropici* swept away nephritis, most kinds of morbus cordis, cirrhosis of the liver, and possibly sundry abdominal tumours; epilepsy and incurable diseases were banned; and finally pregnant women were not allowed to share in the charity.

There remain the specific fevers, ague, and such complaints as pneumonia and bronchitis. Here there would be a small amount of clinical material for any one who was reading for a degree in the medical faculty to study, but as no clinical study was

necessary for a degree, probably no student, unless unusually enthusiastic, would trouble about it.

Besides this collection of sick folk they might also have been found round the various holy wells, such as St. Margaret's at Binsey, and St. Edmund's near the east end of (now) Magdalen Bridge.

Then there were the infirmaries of the great religious houses such as Oseney Abbey and St. Frideswide's Priory. Wood in talking of the last named says: 'Then there was the infirmary where the monks that were sick retired and had the benefit of phisicians and their medicines.' This looks as if a physician who was not a member of the community might occasionally have been called in. Probably, however, the monastic physician was a kind of lay brother, or at least he could take fees, for in the *Chronicle of Jocelin of Brakelond*[1] it is said: 'Our almonry which previously was of wood and out of repair, was built in stone; whereto a certain brother of ours, Walter the physician at that time almoner, contributed much of what he had acquired by his practice of physic.'

Other opportunities for study were provided by the operations of the law. Thus Bernard of Gordon in his *Lilium Medicinae*[2] says in the section on disease of the oesophagus, which the Arabs called Meri, that the stomach has a natural attraction for food. He continues: 'So we see that in Jews,

[1] King's Classics, ed. Moring, London, 1903, p. 146.
[2] Ed. Francofurti, 1617, p. 530.

when they are hung up by the feet, food is none the less drawn into the stomach, which would not happen unless the natural energy of the stomach drew it up and made it ascend.'

Executions too, at least by decapitation, might surely have suggested to a medical observer that the arteries did not carry spirits but blood, and yet this fact was not grasped until Harvey's time, although Galen was aware of it.

Such, then, so far as we can see, were the opportunities for clinical study in mediaeval times, and Gaddesden at any rate must have seen a good number of patients before writing the *Rosa*, but whether he made any use of the possible opportunities for study before taking his degree is very doubtful.

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17 F. ii. *La Grande Histoire de César:* made at Bruges for Edward IV. f. 9, Birth scene.

16 G. viii. *Les Commentaires de Jules César.* f. 32, Caesarian operation (f. 39?).

6 E. vi. *Omne Bonum:* Collection by various authors. f. 122 b, Lying ill. f. 258 b, Trepanning. f. 503 b, Teeth extraction. Other ff. 546 b, 547 &c.

10 E. iv. Decretals. f. 67 b, Cupping operation.

Sloane, 2435. *Livre pour garder la santé, par Aldebranius de Sienne.* Many small miniatures of various medical scenes, &c.

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APPENDIX A

THE LATIN TEXT OF THE EDITOR'S DEDICATION OF THE 'ROSA'.

Nicolaus Scyllatius Siculus magnifico ac praestantissimo Ambrosio Varisio Rosato, Ducali Physico ac Consiliario sapientissimo S(alutem) D(icit).

Qui de diis scripserunt, Ambrosi eruditissime, unum imprimis eos genus hominum veteri gentium opinione in celo collocasse animadverto, qui se videlicet ad homines conservandos juvandosque natos existimarent. Nam et quos Apollines, Cereres, Liberos, Hercules, Aesculapios antiquitas coluit; homines olim fuisse Aegyptus primorum animantium parens non falso commemorat. Sed merita propter eximia quae in societatem humanam praestiterunt, mox deorum vocabulo nuncupatos. Et sane si paulo semotius tecum haec: nihil praeclarius aut deo optimo maximo similius invenies, quam ubi te beneficum omnibus indulgentemque praestiteris.

Quo fit ut te felicem et perbeatum non temere homines nostri seculi et judicent et existiment, quod in omne genus hominum perpensus obviusque et expositus semper occurreris: consulendoque agendo: atque ut es medicinae et astronomiae scientissimus, morbos propellendo, siderum minas furoresque superum avertendo, et regna confirmaveris, et amici diem nunquam perdideris. Omitto quot patrocinio defenderis, quot spoliatos reduxeris, damnatos liberaveris, ut jam illud de te libere decantare liceat, plures unum Ambrosium physicum causas agere, quam centum istos pragmaticos ac leguleos.

Cum semper honorificum ac religiosum existimaveris, ut quantum gratia et auctoritate apud invictissimum principem Ludovicum Mariam Sfortiam valeres, aliorum honoribus et commodis experirere.

Tantum autem te studiosi et literati viri de se benemeritum esse fatentur, ut nemo ferme sit qui studia amet, quin te quoque bonarum artium nomine colat et veneretur. Legis passim de te historias, poemata, actiones, et posteritati tuae (quod rarissimum homini datur) praesens es. Quin illud ausim dicere, nullum te genus hominum ad beatitudinem tibi et eternitatem aptius obligare potuisse quam disertissimos viros. Possem multos nominare in Italia, qui a te singulare presidium susceperunt, nisi vererer ne epistolae modum excederem.

Nam eos tuae beneficentiae praecones citare, quia Mediolani quottidie ante oculos versantur, supervacaneum esse arbitror. Testis est universa academia Ticinensis, quae tantum fastigium te patrono, tum sapientium celebritate, tum salariorum magnitudine accepit, quantum nunquam ante Ambrosium Rosatum majores nostri viderunt, posteri gaudebunt. Ego vero isto tempore studiorum nomine quae sub te in summo apice constiterunt, tum privatim, tum publice lector, tibique (Artaxerxis regis rustici exemplo) munusculum hoc doctum sane et eruditum persolvimus.

Nam cum Ioannes Antonius Birreta vir singularis exempli Ticinensium (pace omnium dixerim) optimus, paulo ante me admonuisset nactum se Rosarium in Medicina, opus rarum . . . et reconditum, juvenibus perutile senibus et exercitatis apprime desideratum, perlegendique mihi copiam fecisset, multa ibi secretiora animadverti, quae post alios recentiores Nicolaus Florentinus inprimis vir in omni medicina diligentissimus, velut apis e roseis floribus utiliora colligens in grandibus suis voluminibus congesserat.

Nunc ut emendarem, cum idem Birreta frugalitatis antiquae specimen, ut est in postulando modestus et verecundus, rogasset, etsi rogandum cui vitam deberem non erat, multo labore multoque studio effecimus, ut quod mutilatum longi temporis situ et librariorum incuria depravatum fuisset, locis quae falso in veterum libris passim allegabantur diligenter recognitis, in faciem absolutam figuramque pristinam pro virili redderemus, ut qui Rosarius olim fuisset, nunc agnitus veluti ex horrida et longa peregrinatione, domum tandem excultus ad suos rediret.

Te igitur patronum et dominum, Ambrosi Rosate, cognoscit, te gentis suae columen salutat, te sibi vindicem paravit qui regum palatia colis et in aulis principum totus es. Hunc cum leges iterum legisse non poenitebit, tam varia et experta, tam multa et presentanea remedia affatim ministrat. Quo fit ut non temere sicuti rosam florum pulcherrimum esse, jam pridem apud nostros receptum est, sic liber iste omnium recentiorum vigilias atque artes qui de hac re scripserunt facile superet. Quantum vero venustatis et elegantiae Rosa ipsa prae se ferat assidue audis, quotidie lectitas. Quae etsi inter coronamenta mortalium sero apud veteres recepta sit, ob id non debet mirari Plinius Secundus novicomensis conterraneus tuus, Veneris enim ea et sane deae potentissimae tantum fuerat, cujus numen ipsi quoque magni dei reformidant. Proinde apud Apthonium scriptum est :—

Qui rosae pulchritudinem demiratur, plagam Veneris consideret. Sed hoc vetus est. Quam lepide et eleganter Libanius sophista Grecus rosam Veneris describens, eam floribus singulis anteponit. Et quoniam fabella ipsa lepidissima est, non insuave tibi fore duxi, si pauca ex illius contextu summatim proposuero.

Quo inquit tempore deabus pastor judex datus est,

angebatur Juno, angebatur Minerva, quod cestu illo qui cingulus erat in quo amoris vires insunt et cupidinis, se Venus veluti medicamento quodam et forme lenocinio exornasset. Ita in certamine prius venturas negabant quam ubi a se Venus cestum deponeret. Dempsit dea cingulum, pacta sibi cesti vice alium ornatum quaerere. Ad Scamandrum pergit lectura flores, qua se pratum sub ripa explicabat herbidum. Lota ibi dea statim qua causa venerat ornatum quaerebat sibi. Tum, nescio qui mire suavis aspirare odor visus, jam lilia jam violas legerat, quum tamen odor ille magis interim magisque blandiebatur. Pergit aurae flagrantis vestigia subsequi, videt rosam visamque naribus admovet et esse hanc suaveolentiae illius matrem cognoscit. Ibi flores aspernata ceteros abjicit humi, tantumque rosis coronata recepit se ad Idam denuo. Nec, ait, plus Veneri flos quam flori Venus conciliare gratiam visa est. Adeoque confestim Juno et Minerva victae, ut ne ipsae quidem pastoris expectarent calculum, sed accurrentes utraque sertum crinibus detraxerint floremque deosculatae ipsum rursus Veneris capiti reposuerunt.

Haec, mi patrone, ego subtexui ut primum quanti tua Rosa sit explicatius legeres, et mox ne ipsum libellum qui medicinae Rosa inscribitur gratia et favore defraudaremus. Conati certe sumus, ut quam absolutius fieri posset tuus Rosarius a Birreta nostro tui benevolentissimo, et a Francisco Girardengo socio et contubernali viro industrio ac diligenti ad te mitteretur. Qui etsi cetera vita laudatissima sunt, hoc tamen maxime excellere judicantur, quod nihil non ante castigatum et expolitum imprimendum curent. Ad tantam avaritiam et sordidos sumptus ex impressoribus maxima pars lapsa est, ut libris perperam aut temere scriptis, non ante recognitis siquid imprimi jusserint in pejus semper verterint. Sed de his satis. Tu modo ostende (ut

facis) tibi nostra studia et lucubratiunculas placere. Non deerunt qui tibi brevi majora et absolutiora prestabunt.

Vale meum presidium et studiosum omnium Mecene.

APPENDIX B

REGULATIONS IN THE KINGDOM OF SICILY AS TO UNQUALIFIED PRACTICE AND REGULAR PRACTICE

The following excerpts from Huillard-Bréholles's *Historia Diplomatica Friderici II*, Paris, 1854, Vol. iv, pt. I, p. 149, contain the regulations referred to on p. 21.

TIT. LXIV. REX ROGERIUS.

De probabili experientia medicorum.

Quisquis amodo mederi voluerit officialibus nostris et judicibus se presentet, eorum discutiendus judicio; quodsi sua temeritate presumpserit, carceri constringatur, bonis omnibus suis publicatis.

Hoc enim prospectum est, ne in regno nostro subjecti periclitentur ex imperitia medicorum.

Ibidem, page 150:

TITULUS LXV. IMPERATOR FREDERICUS.

Utilitate speciali prospicimus cum communi saluti fidelium providemus. Attendentes igitur grave dispendium et irrecuperabile damnum quod posset contingere ex imperitia medicorum, jubemus in posterum, nullum medici titulum pretendentem

audere practicare aliter vel mederi, nisi Salerni primitus in conventu publico magistrorum judicio comprobatus, cum testimonialibus literis de fide et sufficienti scientia tam magistrorum quam ordinatorum nostrorum, ad praesentiam nostram, vel, nobis a regno absentibus, ad illius praesentiam qui vice nostra in regno remanserit (ordinatus accedat) et a nobis vel ab eo medendi licentiam consequatur; pena publicationis bonorum et annalis carceris imminente iis qui contra hoc nostre serenitatis edictum in posterum ausi fuerint practicare.

The licence was granted after the following form given by Huillard-Bréholles:

From Petri de Vin. Epist., lib. vi, cap. xiii.

Notum facimus fidelitati vestre, quod fidelis noster N. ad curiam nostram accedens, examinatus, inventus fidelis et de genere fidelium ortus, et sufficiens ad artem medicine exercendam, extitit per nostram curiam approbatus. Propter quod de ipsius prudentia et legalitate confisi, recepto ab eo in curia nostra fidelitatis sacramento, et de arte ipsa fideliter excercenda juxta consuetudinem juramento, dedimus ei licentiam exercendi artem medicine in partibus ipsis: ut amodo artem ipsam ad honorem et fidelitatem nostram et salutem eorum qui indigent, fideliter ibi debeat exercere. Quocirca fidelitati vestre precipiendo mandamus, quatenus nullus sit, qui predictum N. fidelem nostrum super arte ipsa medicine in terris ipsis, ut dictum est, exercenda, impediat de cetero vel perturbet.

Lib. iii, Tit. xlvi.

Quia nunquam sciri potest scientia medicine nisi de logica[1] aliquid presciatur, statuimus quod nullus

[1] See excerpt from Petrarch, p. 104.

studeat in medicinali scientia nisi prius studeat ad minus triennio in scientia logicali; post triennium si voluerit, ad studium medicine procedat, in qua per quinquennium studeat; ita quod chirurgiam que est pars medicine infra predictum tempus addiscat. Post quod et non ante concedatur sibi licentia practicandi, examinatione juxta curie formam prehabita, et nihilominus recepto pro eo de predicto tempore studii testimonio magistrali.

Then follows a paragraph dealing with the duties of the medical man and giving a scale of fees.[1] The decree proceeds:

Nec tamen post completum quinquennium practicabit, nisi per integrum annum cum consilio experti medici practicetur. Magistri vero infra istud quinquennium libros authenticos tam Hippocratis quam Galeni in scholis doceant, tam in theorica quam in practica medicina. Salubri etiam constitutione sancimus ut nullus chirurgicus ad practicam admittatur, nisi testimoniales literas offerat magistrorum in medicinali facultate legentium quod per annum saltem in ea parte medicine studuerit que chirurgie instruit facultatem, presertim anatomiam humanorum corporum in scholis didicerit, et sit in ea parte medicine perfectus sine qua nec incisiones salubriter fieri poterunt nec facte curari.

[1] See chap. iii, p. 106.

APPENDIX C

TEXT OF DECREE OF BONIFACE VIII CONCERNING THE MUTILATION OF BODIES

Extravagantes Communium, Lib. III, Tit. VI, Cap. I

De Sepulturis. *Bonifacius Octavus.*

Detestandae feritatis abusum, quem ex quodam more horribili nonnulli fideles improvide prosequuntur, nos piae intentionis ducti proposito, ne abusus predicti saevitia ulterius corpora humana dilaceret, mentesque fidelium horrore commoveat, et perturbet auditum, digne decrevimus abolendum.

Praefati namque fideles hujus suae improbandae utique consuetudinis vitio intendentes, si quisquam ex eis genere nobilis, vel dignitatis titulo insignitus, praesertim extra suarum partium limites debitum naturae persolvat, in suis vel alienis remotis partibus, sepultura electa, defuncti corpus ex quodam impiae pietatis affectu truculenter exenterant, ac illud membratim vel in frusta immaniter concidentes, ea subsequenter aquis immersa exponunt ignibus decoquenda. Et tandem (ab ossibus tegumento carnis excusso) eadem ad partes praedictas mittunt, seu deferunt tumulanda. Quod non solum divinae majestatis conspectui abominabile plurimum redditur, sed etiam considerationis obtutibus occurrit vehementius abhorrendum.

Volentes igitur (prout officii nostri debitum exigit) illud in hac parte remedium adhibere, per quod tantae abominationis, tantaeque immanitatis et

impietatis abusus penitus deleatur, nec extendatur ad alios; Apostolica auctoritate statuimus et ordinamus ut cum quis cujuscunque status, aut generis, seu dignitatis extiterit; in civitatibus, terris, seu locis in quibus cultus catholicae fidei viget, diem de cetero claudet extremum; circa corpora defunctorum hujusmodi abusus vel similis nullatenus observetur, nec fidelium manus tanta immanitate foedentur.

Sed ut defunctorum corpora sic impie ac crudeliter non tractentur, deferantur ad loca in quibus viventes elegerint sepeliri, aut in civitate, castro, vel loco ubi decesserint, vel loco vicino ecclesiasticae sepulturae tradantur ad tempus, itaque demum incineratis corporibus, aut alias ad loca ubi sepulturam elegerint, deportentur, et sepeliantur in eis. Nos enim si praedicti defuncti executor vel executores aut familiares ejus seu quivis alii cujuscunque ordinis, conditionis, status aut gradus fuerint etiam si pontificali dignitate praefulgeant, aliquid contra hujusmodi nostri statuti et ordinationis tenorem praesumpserint attentare, defunctorum corpora sic inhumaniter et crudeliter pertractando, vel faciendo pertractari, excommunicationis sententiam (quam ex nunc in ipsos perferimus) ipso facto se noverint incursuros, a qua non nisi per Apostolicam sedem (praeterquam in mortis articulo) possint absolutionis beneficium obtinere. Et nihilominus ille cujus corpus sic inhumane tractatum fuerit, ecclesiastica careat sepultura. Nulli ergo &c.

Datum Lateranensi xii Cal. Mart.
Pontificatus nostri anno sexto.

APPENDIX D

'THE ISAGOGE'

For the right understanding of any work on mediaeval medicine, it is necessary for the reader to understand the various technical terms employed. He will, for instance, always be met with such expressions as the 'six non-naturals', the 'naturals', and so on. These are explained in the well-known work the *Isagoge,* written by Joannitius, or, to give him his Arabic name, Hunain. This treatise was the Introduction which he wrote to his translation of the *Microtegni* of Galen. It was translated into Latin at an early date, but by whom is not known. In places the Latin is very obscure. The version from which the following translation has been made is that printed in the *Articella* published at Lyons in 1515.

The Beginning of the Introduction of Joannitius to Medicine.

Medicine is divided into two parts, namely theoretic and practical. And of these two the theoretic is further divided into three, that is to say, the consideration of the naturals, the non-naturals, and the contra naturals.[1] From the consideration of these arises the knowledge of sickness, of health, and of the mean state, and their causes and significations; of when the four humours increase in an abnormal manner, or of what may be the causation (*occasio*) or significance of sickness.

[1] See *Rosa,* fol. 1 verso, col. 2, 'Signa febris Tertiane.'

Of the Naturals.

The naturals are seven in number: elements, qualities (*commixtiones*), humours (*compositiones*), members, energies, operations, and spirits. But some add to these four others: namely, age, colour, figure, and the distinction between male and female.

The Elements.

There are four elements: fire, air, water, and earth. Fire is hot and dry; air is hot and moist; water is cold and moist; earth is cold and dry.

The Qualities.

There are nine qualities, eight unequal and one equal. Of the unequal, four are simple: namely, hot, cold, moist, and dry. From these arise four compound: namely, hot and moist, hot and dry, cold and moist, cold and dry.

The equal is when the body is so disposed that it is in good condition and in a mean state, when it has a proper amount of all four. ('Equalis vero est quando cum moderatione corpus incolume ducitur.')

Of the Humours (*De Humoribus*).

The humours (*compositiones*) are four in number: namely, blood, phlegm, reddish bile, and black bile. Blood is hot and moist, phlegm is cold and moist, reddish bile is hot and dry, black bile is cold and dry.

Of phlegm. There are five varieties of phlegm. There is the salt phlegm, which is hotter and drier than the rest and is tinged with the biliary humour. There is the sweet phlegm belonging to hotness and dampness, which is tinged with the sanguine humour. There is the acrid phlegm belonging to coldness and dryness, which is tinged with the melancholic humour.

There is the glassy phlegm, which arises from great coldness and coagulation such as occurs in old people who are destitute of natural warmth. And there is another which is cold and moist; it has no odour, but retains its own coldness and moistness.

Of reddish bile. Reddish bile exists in five different fashions. There is reddish bile which is clear or pure and hot, both by nature and substance, of which the origin is from the liver. There is another which is straw-coloured, from which the origin is from the watery humour of the phlegm, and pure reddish bile, and therefore it is less hot. Another is vitelline. It is similar to the yolk of an egg, and it has its origin from a mixture of coagulated phlegm and clear red bile, and this is less hot. Another one is green bile, like the green of a leek (*prasium*), and it arises generally from the stomach or the liver; and there is another which is green like verdigris, and which burns after the fashion of a poison, and its origin is from too much *adustio*, and it possesses its own proper colour and its own energies, both good and evil.

Of black bile. Black bile exists in two different fashions. In one way it may be said to be natural to the dregs of the blood and any disturbance of the same, and it can be known from its black colour whether it flows out of the body from below or above, and its property is cold and dry. The other kind is altogether outside the course of nature, and its origin is from the *adustio* of the choleric quality, and so it is rightly called black, and it is hotter and lighter, and having in itself a most deadly quality and a pernicious character.

Of the various kinds of members.

There are four kinds of members. Some of them are principal, and are as it were the substance and

fundamentals of the body, as, for instance, the brain, the heart, the liver, and the testicles; and there are others which do service to the aforesaid principals, such as the nerves, which minister to the brain, and the arteries, which minister to the heart, and the veins, which minister to the liver, and the spermatic vessels, which minister to the testicles, and bring the sperm to them. Some of the members, again, have their proper energy whence the members are ruled and in which their particular qualities consist. Such are the bones, and the cartilages, and the membranes which lie between the skin and the flesh and the muscles and the fat and the flesh. Others there are which work by the energy proper to them, but yet they obtain their origin and vigour from the principals and fundamentals. Such are the stomach, the kidneys, the intestines, and the muscles (*lacerti*). For these by their own proper energy pick up the food and commute it, and they do their actions according to their nature, and they have other energies of their own arising from the principals and fundamentals, in which principals consist sense and life with voluntary motion.

Of the number and division of the energies.

The energies are divided into three. There is the animal energy and the spiritual and the natural.

Of the natural energy. There is one natural energy which does service, and one to which service is done. But the natural energy to which service is done at one time generates, at another time nourishes, and at another feeds.

But the energy which does service and is not done service to, in the same way desires, retains, and digests, and it expels those matters which are subject to the feeding energy, just as the feeding energy is subject to the nourishing energy. And the natural

energy in its generating function is served by two others, one which transmits the food and the other which shapes it; and these two differ, the one from the other, for the first changes the food and ministers to the generating energy, without the shaping, but the second does the same thing with shaping. And the operations of the informative energy are five—Assimilativa, Concava, Perforabilis, Aspera, Lenis.

Of the Spiritual Energy. From the spiritual energy proceed two others, one the operative, and the other the result of the operation. The operative energy is that which at one time dilates and at another contracts the heart and the arteries, and the results of this are as follows—Indignation, Victory, Domination, Astuteness, and Anxiety.

Of the Animal Energy. The zodiacal energy embraces three things. There is one which arranges and puts together and classifies. The second is that which is moved by voluntary motion, and the third is that which is called sensible. From the first proceed Imagination in the front of the head, Cogitation or Reasoning in the brain, and Memory in the occipital region. The second moves the muscles (*lacerti*), by which the other members are moved, that is to say by voluntary motion. And the sensible energy resides in sight, hearing, taste, touch, and smell.

The operations.

Operations are of two kinds: there are some each one of which individually performs that which is its own (function). Such, for instance, is appetite by means of heat and dryness; Digestion by means of heat and moisture; Retention by cold and dryness; Expulsion by cold and moisture. There are also compound operations which are of a double nature: such are desire (*desiderium*) and carrying off (*depor-*

tatio). Desire is compounded of a double energy: the one longs for (*appetit*), and the other feels; for the stomach is conscious of its own place ('stomachus enim suam mansionem sentit'). Carrying off is of two or more energies, one casts out, another attracts or feels, and a third longs for.

The Spirits.

The spirits are three in number: the first the natural spirit, having its origin from the liver; the second the vital spirit, having its origin from the heart; the third the animal spirit, having its origin from the brain. Of these three the first is diffused throughout the body by means of the veins which have no pulse; the second is diffused throughout the body by the heart; and the third is diffused throughout the body through the agency of the nerves by the brain. These are the matters which come under the heading of spirit in the seventh division of the seven naturals.

Of the Ages.

There are four ages; namely, adolescence, the prime (*juventus*), decline (*senectus*), and decay (*senium*). The period of adolescence is hot and moist, during which the body increases and grows up to the twenty-fifth or thirtieth year. The prime follows which is hot and dry, during which the body remains in perfection without any diminution of bodily force, and it lasts from the thirty-fifth to the fortieth year. Next comes decline, which is cold and dry, and during this period the body begins to lessen and decrease, although the bodily force is not abated, and it lasts to the fiftieth or sixtieth year. Finally succeeds decay, which is cold and moist, with appearance of the phlegmatic humour, and during

this period the bodily forces are abated, and the period ends with the end of life.

Of the colours of the skin and their Divisions.

The colours of the skin are of two kinds; namely, those due to internal causes and those due to external. And the internal causes again are two in number; namely, excess or equality of humours. From equality comes that tint which is composed of white and red; from inequality proceed black, yellow, reddish (*rubeus*), greyish (*glaucus*), and white. The reddish, black, and yellow set forth the ruling humour of the body: yellow by itself signifies reddish bile; black by itself, black bile; reddish by itself, abundance of blood. White and greyish signify an excess of coldness ruling the body; greyish arises from black bile (*melancholia*) and white from phlegm.

Certain colours arise from external circumstances, such as from cold among the Scots and from heat among the Ethiopians. And there are many others from other causes.

There are also special or spiritual colours, due to fear, anger, grief, or other affections of the mind.

Of the Colours of the Hair.

There are four colours of the hair—black, reddish, greyish, and white. Black is due to an excess of over-heated bile or blood; reddish to a superfluity of a rather lower heat (*caloris non adusti*)—this is always the cause of reddish hair; greyish arises from an excess of black bile, and white from a deficiency of the natural heat and the operation of putrid phlegm, and is therefore chiefly found in the aged.

Of the Coats of the Eye.

The eye has seven coats and three humours. The first coat is the retina, the second the secundine,

the third the sclerotic, the fourth the spider's web (*tela aranea*), the fifth the uvea, the sixth the cornea, and the seventh the conjunctiva. And of the humours the first is the vitreous, the second the crystalline, and the third the albugineous which is in front of the uvea.

Of the Qualities of the Body.

The qualities of the body are five in number; namely, excess or grossness; thinness or tenuity; 'sinthesis' (wasting), squalidity, and the mean state (*equalitas*). There are two kinds of grossness, the one consisting in excess of flesh, and the other in fat. Excess of flesh arises from excess of heat and humours; but fatness from cold and intense humidity; loss of fat or thinness arises from heat and intense dryness. Sinthesis arises from cold and intense dryness; squalidity either from cold and intense humidity, or from an intensity of both together. And the mean state arises from a proper proportion of the humours. These are the appearances of the body.

Of the Difference between Male and Female.

The male differs from the female in that he is hotter and more dry; she, on the contrary, is colder and more moist.

THE BEGINNING OF THE TREATISE ON THE NON-NATURALS;

and first of the Changes of the Air.

Changes of the air come about in five different ways; from the seasons, from the rising and setting of the stars, from the winds, and from the different countries and their exhalations (*fumositas*).

Of the Seasons.

There are four seasons; namely, Spring, which is hot and moist; Summer, which is hot and dry;

Autumn, which is cold and dry; Winter, which is cold and moist.

The nature of the air is also changed by the stars, for when the sun approaches a star or a star the sun, the air becomes hotter. But when they separate the coldness of the air is altered, viz., either increased or diminished.

Of the Number and Properties of the Winds.

There are four winds; the East (*subsolanus*), the West, the North, and the South (*auster*). And of these the nature of one is cold and dry and of another hot and moist. The two others are of an equal nature, for the East is hot and dry and the West is cold and moist. The South is slightly hotter and moister and the North colder and dryer.

Of Varieties of Places and their Qualities.

There are four varieties of places; namely, height, depth, nearness to mountains or to the sea, and those particular qualities in which one district differs from another. Height produces cold and depth the contrary.

The relation to mountains is as follows: if the mountains are to the south, the locality will be the cooler, for the mountains keep off the hot winds, and so the north winds seek it out with their cool breath. But if the mountains are to the north of the locality the reverse is the case.

As regards relation to the sea: if the sea is on the south the locality will be hot and dry, if to the north it will be cold and dry.

Soils differ among themselves. Stony land is cold and dry; fat and heavy land is hot and moist; clay lands are cold and moist. Exhalations from marshy land or other places where decay is going on also change the air and give rise to disease and pestilence.

Of Exercise.

Exercise has an effect on the body. To a mean amount it causes a mean amount of heat, i.e. exercise in moderation maintains the normal bodily heat. Violent exercise first of all heats the body, but afterwards cools and dries it.

Rest also affects the body; if excessive it increases cold and moisture, if of a normal amount it maintains the normal amount of coldness and moisture.

Of Baths.

Baths are either of fresh water or not fresh. Fresh-water baths soften the body, and if hot they warm it, but if cold they cool it. But a fresh-water bath does not dry up the body. Baths of salt or bitter or sulphurous waters heat and dry up the body. Aluminous or lime (*gipsea*) baths cool and dry up the body.

Of Foods.

Foods are of two kinds. Good food is that which brings about a good humour, and bad food is that which brings about an evil humour. And that which produces a good humour is that which generates good blood; namely, that which is in the mean state as regards quality (*commixtio*) and working. Such is clean fresh, fermented bread, and the flesh of lamb or kid. Bad food brings about the contrary state, and such is old and bran (*opirus*) bread, or the flesh of old beeves or goats. Foods producing good or evil humours may also be heavy or light. Of the first kind are pork and beef, of the second chicken or fish. And of these the flesh of the middle-sized and more active kinds is better than that of the fatter and scaly varieties.

Certain kinds of vegetables produce evil humours; for instance, nasturtium, mustard, and garlic beget

reddish bile. Lentils, cabbage, and the meat of old goats or beeves produce black bile. Pork, lamb, purslain, and attriplex beget phlegm. Heavy foods produce phlegm and black bile, light food produces reddish bile, and either of these is evil.

Of Drinks.

Drinks are of three kinds: firstly, drink which is nothing but drink, as water; secondly, drink which is both drink and food, as wine; and thirdly, drink partaking of the nature of both of these, called *potio*, which is given to counteract the evil of some disease. Such are mellicratum, mulsa, and conditum.

The use of the food is to restore the wholeness of the body, the use of the drink is to distribute the food throughout the body. But that kind of drink which we have above called *potio* converts the nature of the body to itself. ('Sed illius potus quem potioni diximus pertinere, corporis naturam ad se convertit.')

Of Sleep.

Sleep changes the nature of the body in that it cools it exteriorly and warms it interiorly. If it be prolonged it cools and moistens the body.

Waking also changes the body, for it warms it exteriorly, while interiorly it cools and dries it.

Of Coitus.

'Coitus hoc prestat corpori; siccat corpus et minuit naturalem virtutem, ideoque infrigidat, multitotiens vero ex multa concussione corpus calefacit.'

Of Affections (Accidentibus) of the Mind.

Sundry affections of the mind produce an effect within the body, such as those which bring the natural heat from the interior of the body to the outer parts or the surface of the skin. Sometimes

this happens suddenly, as with anger; sometimes gently and slowly, as with delight and joy. Some affections, again, withdraw the natural heat and conceal it either suddenly, as with fear and terror, or again gradually, as poverty. And again some affections disturb the natural energy both internal and external, as, for instance, grief.

Of the Contra Naturals.

There are three contra naturals; namely, disease, the cause of disease, and the concomitants or sequels of disease. Disease is that which primarily injures the body, without the aid of any intermediary, as, for instance, heat in continued (*succedente*) fever.

Of Fevers.

Fever is unnatural heat, i. e. heat which overpasses the normal course of nature. And it proceeds from the heart into the arteries, and is harmful by its own effects.

And of it there are three kinds: the first in the spirit (*anima*), which is called ephemeral; the second arises from the humours which putrefy, and which is therefore called putrid; and the third affects for ill the solid portions of the body, and this is called ethic (i. e. hectic).

Of these three the ephemeral variety arises from non-essential causes (*ab accidenti occasione*). Putrid fever arises from putrid matters, and these are simple and uncombined, and they are four in number.

The first is that which arises from putridity of the blood and burns up both the interior and exterior of the body; such, for instance, is continued fever (*sinochus*).

The second is that which arises from putridity of reddish bile; such, for instance, is tertian fever (*tritheus*).

The third arises from putridity of phlegm; such, for instance, is quotidian fever.

And the fourth arises from putridity of black bile; this attacks the sick man after an interval of two days, and it is called quartan.

In addition there are three kinds of fevers occurring from putridity. First there is the fever which lessens day by day; such, for instance, as that called *peraugmasticus*, i. e. decreasing (παρακμαστικός).

Secondly, that which increases until it departs; such as that called *augmasticus* (ἀκμαστικός).

Thirdly, that which neither decreases nor increases until it again (*iterum*) departs; such, for instance, as that called *homothenus* (ὁμότονος).

Continued fever arising from putridity in the veins begins to decline by departing from out the veins into other parts of the body.

Goose-skin or shivering (*horripilatio*) occurs in fevers from an infusion of putrid matter into the sensitive members, which gnaws (*mordens*) and makes them cold.

And, therefore, goose-skin occurs in these fevers which are characterized by remissions (*anesim*) or variations (*interpolationem*), for the putrid matters are outside the veins.

Of Swellings.

There are four simple kinds of swellings; those which arise from the blood and are called phlegmons; those which arise from reddish bile and are called *erysipelas*; those which arise from coagulated phlegm and are called *undimiae*[1] or *cimiae*, that is to say tumour; and finally, those which arise from black bile and are called cancerous phlegmons.

[1] *Undimiae* is a corruption of οἴδημα. An English translation of Lanfranc, circa 1400, has 'vdemia'.

The signs of a swelling arising from the blood are these: redness, a hard pulse, pain, heat, swelling.

And the signs of those arising from bile are these: heat, a reddish yellow colour, great pain of a darting character, and rapid increase. And the signs of those arising from phlegm are these; a white colour and softness, so that if the finger be pressed thereon it makes an impression; moreover it is painless.

And the signs of those arising from black bile are these: great hardness, a black colour, and absence of feeling.

Of the Natural Condition (Res Naturalis) in the Human Body.

In the human body, if each and singular natural condition maintains its proper quality, such a condition makes for health. If any one of them fails, either sickness follows or else the neutral state.

Of the Classes of Sickness.

There are three classes of sickness: (1) the similar, (2) the official, and (3) the universal.

An *aegritudo consimilis* is one affecting the similar members (tissues), and they receive names of like nature to the suffering; such, for instance, as an aching (head). ('Est quidem egritudo consimilis similibus membris contingens quae similia sortiuntur vocabula cum eadem passione; ut est caput dolens.')

And an *aegritudo officialis* is one which occurs in special members, such as the feet, the hands, the tongue, or the teeth. This takes its name from the accompanying infirmity (*ex accidenti infirmitate*), such as podagra in the foot or chiragra in the hand. Or again, it may take the name from the member in which they occur (*ex membris quibus accidunt*), as podagra, chiragra.

(This passage is very obscure, but it seems to

mean that an *aegritudo consimilis* receives its name from the kind of suffering, as, for instance, aching, burning, and the like. The *aegritudo officialis* is so called from the organ or member which it affects. Thus 'toothache' is an *aegritudo officialis*, while aching, burning, or darting pains in the head would be *aegritudines consimiles*.)

And finally an *aegritudo universalis* is one which is associated with the two aforesaid, as separation of the limbs and paralysis.

Of Diseases in the Similar Members.

Diseases of the similar parts are eight in number, four simple, and four compound.

The simple arise solely from heat, from moisture, from cold, or from dryness.

And these four may be combined so as to be compound, such as cold and moist, cold and dry, hot and moist, hot and dry.

Each of the eight kinds may be of two varieties, for either it is of a simple quality (*ex qualitate simplici*), or it is combined with one or other of the humours.

For example, a disease of a simple quality is one affecting the solid members, such as the Greeks call *ethica* (i. e. hectic).

A hot disease arising from combination with some humour is a putrid fever, as has been said above.

Chilling (*algor*) due to very cold air or snow is a simple cold disease without admixture of any humour. But a cold disease, with an admixture of humour, is paralysis, either complete or partial.

The mark of a moist disease is that it has an admixture of humour; for instance a cold or ulcerated (*vacuum*) wound; or again a very foetid wound accompanied by wasting of the body, as, for instance, the puffed-up flesh of dropsical persons, which flesh is inactive and in an unprofitable condition ('quemad-

modum inflata caro hydropicorum vacuo squalore torpens').

A moist disease is one which attracts to itself foreign humours, as, for instance, dropsy.

A dry disease with an admixture of humour is, for instance, a hard and dry cancer.

Of Diseases in the Official Members.

Diseases occurring in the official members are four in kind: they concern shape, size, number, and position.

(1) As to shape. Abnormalities of this are unbecomingness of a member, e.g. (*a*) a very long head; (*b*) absence of the normal concavity, as when the hollow of the foot or hand is filled up with flesh; (*c*) variations in the size of canals, as stricture or dilatation; (*d*) roughness, as of the throat or of the trachea and bronchi; (*e*) smoothness, as of the womb or the stomach.

(2) As to size. Abnormalities of size arise from overplus of sperm, owing to which the member grows to a greater size than it should do. And so we sometimes see a very large head or tongue.

Also a member may be unbecomingly small, as we sometimes see in the case of the head, the stomach, or the liver.

(3) As to number. Abnormalities of this kind occur either by augmentation or diminution. And those due to augmentation are either according to the course of nature or outside it. Of the first kind are extra fingers; of the second are round worms (*lumbrici*), thread worms (*ascarides*), warts, and acrocordines, that is to say large fleshy growths or large spreading warts or fistulae (*pori*).

Those due to diminution are either universal or particular. Of the first kind is absence of all the fingers; of the second kind absence of one finger.

(4) As to position. Abnormalities of position are due either to a removal of the member from its proper place or to some defect in its relation to neighbouring parts. Such abnormalities we see in the fingers and the lips. The fingers may be double (*conglutinantur*), or webbed (*vel adherent*), or the lips may be separated and not joined (? harelip).

Separation in a member which ought to be whole happens both in similar members and in official members. The similar members are the bones, the nerves, the flesh, the veins, the muscles, and the skin.

When separation occurs in a bone it is termed a fracture; when occurring in the flesh (if recent) it is termed a wound. But if the injury is of old standing it is not called simply a wound, but a putrid wound.

Separation in veins, nerves, or arteries is sometimes called by one name and sometimes by another.

If the injury occurs in the middle of a muscle it is called a contusion or a bruise (*contritio*).

If it occurs in the skin, it is termed an excoriation; but this, if it be of long standing, may become a putrid wound.

Separation occurring in the official members may be lasting, as, for instance, loss of the hand or foot.

Of the Qualities of the Body.

The qualities of the body are three in number; namely, health, sickness, and the mean state.

Health is that condition in which the temperament of the body and the seven naturals are working according to the course of nature.

Sickness is defect in temperament outside the course of nature, and injuring nature, whence arises an efficient condition of harm which may be felt ('unde fit laesionis effectus sensibilis'). The mean

state is that which is neither health nor disease. And there are three kinds of this mean state: (*a*) when health and disease co-exist in the same body; which may happen in different members, as in the blind or the lame; (*b*) in the bodies of the aged, in whom no one member remains that is not in evil case or suffers; (*c*) in those who are well at one season and sick at another. For instance, persons of a cold nature are sick in the winter and well in the summer; and those of a moist nature are sick in childhood, but well in youth and old age. Those of a dry nature are well in childhood, but sick in youth and old age.

Health, sickness, and the mean state are evident in three ways; (1) in the body in which any one of them occurs; (2) in the cause which produces, which governs, and which preserves them; (3) in their indicating signs.

Of the Causes (Occasiones).

Causes are of two kinds, either natural or outside the course of nature.

Natural causes either produce health or preserve it.

And the preservative causes pertain to the maintenance of health, but the productive causes to the expulsion of sickness.

The non-natural causes pertain to sickness or to the mean state. Causes of sickness produce sickness, and they also maintain it. And that which pertains neither to health nor to sickness brings about and maintains the mean state.

Of the Causes of Health and of Sickness.

The causes which have a relation to health and sickness are six in number,[1] and of these the first is

[1] i.e. the six non-naturals.

the air which surrounds the body. Then follow food and drink, exercise and rest, sleep and waking, fasting and fullness, and finally affections of the mind. All these, if in moderation as to quantity, quality, time, function, and order, tend to preserve health. But if in excess in one of these matters they tend to produce sickness and to maintain it. The causes which bring about sickness are of three kinds; those which are called primitive and affect the body externally, such as cold and heat; those which are accidental and act within the body, such as fullness or fasting; and those which are called conjoint, because when they are present disease is present, and vice versa, such as, for instance, putridity in fevers.

Of the Varieties of Sickness.

Sickness may again be classified under two heads; namely, common and proper.

Those under the first heading occur either accidentally, such as striking, burning, biting, catching in a trap (?) (*deceptio*), or other harmful effects.

Or they occur of necessity; for example, those just mentioned as having a relation to health and sickness. And these are really proper sicknesses and they occur in the similar members, where they maintain sickness, or in the official members, and in cases of permanent separation, i.e. in loss of the hand or foot.

Of the Diseases Arising from Heat.

Disease may arise from heat in five different ways.

Firstly, from disturbance of the spirits or of the body. An example of the former is anger, of the latter, fatigue, or sexual excitement (*superbia*).

Secondly, the direct action and obvious effects of heat, such as hypanthasis, i.e. sunburn or sunstroke.

Thirdly, heating of the body by some substance which has an accompanying faculty of heat, such as the use of 'acrumina' ⟨e. g. onions and garlic⟩.

Fourthly, from the shutting up of the pores, as from cold in winter.

Fifthly, from putridity of the humours, as in fevers.

Of the Diseases Arising from Cold.

Disease may arise from cold in eight different ways.

Firstly, from the direct action and visible effect of cold, such as from the coldness of snow.

Secondly, from cold drugs such as opium, which strongly affect the human body.

Thirdly, from excess of food, which fills up the body and extinguishes the natural heat.

Fourthly, from deprivation of food, which also extinguishes the natural heat.

Fifthly, from excess of cold or of cold humours, which block up the pores, so that the natural heat is lessened.

Sixthly, from purging and opening of the body, so that the natural heat is purged away and evacuated.

Seventhly, from violent exercise with profuse sweating, whereby the body is weakened.

Eighthly, from sleep and plenty of leisure (*occasione multa*).

Of the Diseases Arising from Dryness.

Disease may arise from dryness in four different ways.

Firstly, from the direct action and visible effect of dryness, such as the dryness of poison.

Secondly, from the presence in the body of some dry harsh substance, as, for instance, vinegar, salt, or mustard.

Thirdly, from deficiency of food or drink.

Fourthly, from over-exercise.

Of the causes of Diseases Arising from Moisture.

Disease may arise from moisture in four different ways.

Firstly, from the direct action and visible effect of moisture, such as a bath.

Secondly, from the presence in the body of some moist substance, such as fresh fish.

Thirdly, from excess of food or drink.

Fourthly, from sleep and leisure.

Of the Modes of Disease.

There are four ways in which disease may occur from an abnormal motion of some humour to a weakly part.

Firstly, vigour of the impelling, and weakness of the receiving, member.

Secondly, an abundance of humour.

Thirdly, weakness of the nutrient energy.

Fourthly, an abnormal largeness of the pores.

Of the Evil Quality ('*Malitia*') *of Sickness.*

The evil quality of sickness attacks and resides in a similar member in five different ways.

Firstly, in the uterus.

Secondly, at the time of birth.

Thirdly, from the infant being too tightly swaddled.

Fourthly, from defective nutrition.

Fifthly, from any sickness which may occur at the aforesaid times or afterwards.

Sickness of the embryo or foetus arises from a defect in the sperm, which may be either too thick and rich or ~~two~~ thin and watery.

If the child be not born rightly it may be affected for ill, as, for instance, if it be delivered looking upwards (? face presentation) or with the knees bent

(? breech presentation). If it be too tightly swaddled it may be injured by being doubled up (*duplicatus debilitatur*).

Or it may be defectively nourished by not being able to suck or to take milk.

And at any of these seasons or afterwards sickness may occur in a consimilar member by incision of any tendon or nerve (*nervus*).

Or some accident may occur, or a wound or a swelling (*apostema*).

Of Sicknesses of the Consimilar Members.

Sickness may affect a similar member in seven different ways.

Firstly, from a midwife who holds the child improperly.

Secondly, if the child be allowed to walk too soon.

Thirdly, from an ignorant physician if he puts to right, or bandages, deformed (*contrafacta*) or bruised limbs unskilfully.

Fourthly, from the patient himself, should he move a broken or injured limb, after being put up by the surgeon, before it has properly healed or set.

Fifthly, from fracture, as, for instance, when the hip is twisted above the muscle of the hip-bone which is on the femur ('ut si super musculum vertebri quod in femore est contorqueatur coxa').[1]

Sixthly, from a blow as, for instance, if the nose be driven in and a 'chimus' is the result.

Seventhly, from some evil humour, as is the case in lepers, or from some deficiency of the humour as is the case of those who are phthisical ('humoris accidentis ptisicis').

[1] This passage would seem to be a reference to some dislocation at the hip-joint.

Of Constriction or Dilatation of the Pores: Of Smoothness and of Roughness.

Constriction of the pores happens in three ways. Firstly, from uncomplicated constriction; secondly, from fleshiness; thirdly, from narrowing (*coartatione*).

Uncomplicated constriction is caused (*a*) by excess of the retentive energy; or (*b*) by deficiency of the expulsive energy; or (*c*) by excessive cold; or (*d*) by tight constriction of any part of a limb, as often happens from a tight bandage; or (*e*) from excess of dryness.

Secondly, fleshiness contracts the pores, as in the case of swellings (*apostema*) or in the seat of an old wound (? scar tissue).

Thirdly, narrowing contracts the pores, when anything is deposited in them such as a humour, or a stone, or a blood clot, or again anything which lies hid therein, such as proud flesh or 'scabies'.

Dilation of the pores may be due to four causes.

Firstly, excess of the expulsive energy; secondly, to deficiency of the retentive energy; thirdly, to excess of the colours of humours. Fourthly, to aperient medicines.

Smoothness may occur after two fashions; internal and external.

If internal it may be due to liquefied and viscous humours, if external to ointments.

Finally, roughness may occur after two fashions: internal, due to excess of sharp humour, or external from smoke and dust.

Of Excess of the Number of Members.

Excess of the number of members happens in two ways. If natural, it is due to an excess of the natural and normal humour, or from excess of the informative energy.

If outside the course of nature it is due to an unnatural and abnormal humour, or to an excess or deficiency of energy.

Of Diminution in the Number of the Members.

In like manner, diminution of the number of the members happens in two ways, internal and external.

If internal it may be due to diminution of humours. If external, to burning, or to cold, or to putridity, or to cutting.

Putridity is due either to some poisonous draught which causes mortification or brings about putrefaction ('ex potione mortificante, aut putredinem faciente'), or to constriction and retention of the humour which is thereby broken down.

Of the Size of the Members.

Bigness of the members occurs in three ways. Firstly, from an excess of the humours; secondly, from an excess of the (formative) energy; thirdly, from an admixture of the two.

Smallness also occurs in three ways. Firstly, from deficiency of the energy; secondly, from cutting (*incisione*); thirdly, from burning by fire or from excessive cold.

Of the Displacement of a Member.

Commotio membri de suo loco duobus modis fit. Aut ex commotione voluntaria, aut ex humore vicino equitanti dissolventi membrum et lubricum facienti.

Membrum vel os egreditur e sua junctura et mutatur duobus modis similiter. Aut ex junctura in qua non convenit separatio, aut ex separatione ubi non convenit junctura. Si ex conjunctione hoc fuerit sine separatione, aut erit ex humore acuto patientis, aut ex accidenti vulnere, aut spasmo.

Si vero fuerit ex separatione ubi non convenit

conjunctio, aut ex grosso humore, aut ex accidenti vulnere, aut ex spasmo.[1]

Of Separation of Parts Normally Joined.

Separation of parts normally joined is due to either an intrinsic or to an extrinsic cause.

Intrinsic causes are the invasion of (*a*) an acute humour; and (*b*) a ventosity,[2] which distends and weakens the parts.

Extrinsic causes are cutting, fracture, rupture due to muscular effort (*exercitium nimium*), sword cuts, anything which stretches (*distendit*), as a rope, or which bruises, as a stone.

Of the Kinds and Number of Symptoms.

There are three genera of symptoms, which refer respectively to health, to sickness, and to the mean state.

And each genus is divided into two species; namely, those which have to do with the official members, and those which have to do with the similar members.

Again, the symptoms of similar members are of two kinds, i. e. substantial and accidental.

The substantial are heat, cold, dryness, and moisture. The accidental are those which show their significance either by touch, as hardness or

[1] I have not translated this passage from sheer inability to do so; it apparently refers to the difference between a fracture and a dislocation, *junctura* sometimes meaning a joint in the anatomical sense, and sometimes a joint in the carpenter's sense, i. e. continuity of tissue. *Membrum*, too, seems first to mean an organ and afterwards a limb. So that the beginning of the second paragraph would mean something like the following: 'A limb or a bone can be moved from its continuity in two ways, either at a joint, in which case there is no fracture, or by a fracture where there is no joint.'

[2] Cf. the old term 'Spina Ventosa'.

softness; or by sight, as colour. Some, again, are obvious by action of the energies, as, for instance, when the functions are well and fully performed.

Of Symptoms in the Official Members.

Symptoms in the official members are likewise divided into substantial and accidental. The first are four in number, namely, number, position, ars (? function), modus (? arrangement). The accidental are likewise four: namely, good, bad, perfect, imperfect.

Of the Genera of Symptoms.

There are three genera of symptoms: (1) those which show what has happened, and they are called cognitive or agnitive. For instance, when we find the body wet we know that sweating has gone before. (2) Those which show what is present and are called by Galen demonstrative, as, for instance, when we find a large and quick pulse we understand that fever is present. (3) Those which show what will happen and the perception of those precedes the event, as, for instance, if we see the lower lip tremble we judge that vomiting will occur, which after it has happened is called *precessio significativa.*

But between symptoms and signs (*accidentia*) there is a difference, and there is a gradually widening division between them. If you carefully examine each one of the differences respectively it will have one particular signification; but some things which are signs to the patient are symptoms to the physician.

Of Signs and their Number.

Significant signs are of three kinds: a change in the operative energy, as, for instance, indigestion; a change in bodily quality, as, for instance, jaundice; a change in excretion, as, for instance, black urine.

Of Change in the Operative Energy.

Changes in the operative energy are three in kind: total, as indigestion; or partial, as obscurity of the eyes, or slow digestion; or from one quality to another, as when good digestion is changed into a turbid or acid digestion, or when specks like flies or chips (*ligna*) appear before the eyes, or partial obscurity of the sight.

Of Changes in Quality.

Changes in quality are four in kind. Those obvious to sight, as jaundice, or morphea,[1] or black tongue; or known by smell, as foetid breath or sweat or polypus; or again those which are known by taste, as salt, bitter and acid; and finally those which are known by touch, as hard and soft.

Of Excretions.

There is a double significance in the excretions. For some come forth with noise, such as eructations from the mouth, rumbling in the intestines, and wind from the anus.

And those which come forth without sound may be abnormal in three different ways: in quantity, or quality, or in both. An example of the first is lientery, of the second black urine, of the third a flux of blood.

Of Alterations in Members.

Alterations in members are primarily divided into two classes, namely intrinsic and extrinsic.

Intrinsic changes are six in number: (*a*) change of the operative energy of a member; (*b*) changes in the excretions; (*c*) changes from pain in the neigh-

[1] 'Morphea is a spice of lepre that sitt in the skyn.' Lanfranc, *Science of Cirurgie*, English translation about 1380, E.E.T.S., Orig. Series, No. 102.

bourhood of a member; (*d*) changes from pain in the member itself; (*e*) changes by abnormal mobility; (*f*) changes gathered from the opinion of the patient. And intrinsic changes are three in number: (*a*) those obvious to the sight, as whiteness or blackness; (*b*) those obvious to the touch, as hardness or softness, heat or cold; (*c*) those which are obvious to both senses, as greatness or smallness, increase or decrease.

Of the Causes of Sickness.

The causes of sickness are three in number: Firstly, a change of nature; secondly, habitudo inconveniens of an official member; thirdly, a separation of continuity.

Of the Operation of Medicine.

The operation of a medicine has the following threefold effect: it preserves health, after its many different kinds (*secundum multitudinem suam*); or, out of illness it produces health; or finally it acts in the contrary fashion.

Of the Regimen of Health.

The regimen of health is of three kinds according as it deals with those prone to illness, those just beginning to be ill, and weakly persons.

The first classes are treated by proper regulation of the aforesaid six things, i. e. the non-naturals.

Those in the second class are treated in two ways; first, by removal of the excess of humour (*chimus*); secondly, by repairing any defect in nature and by counselling adherence to the proper observance of the non-naturals.

'Weakly persons' are infants, old persons, and convalescents.

Of the Divisions of Medicine in General.

All Medicine comes under one of two heads, general or particular.

General Medicine concerns itself with the right ordering of the non-naturals.

Particular Medicine has three divisions, according to whether it is concerned with the similar members, the official members, or with solution of continuity.

Abnormal changes in the similar members are treated by being brought back to their original condition or state, and retained therein by bandaging.

If hollow organs (? channels) are over-dilated we bring them back to their proper size and keep at rest. If they are too small we do the contrary. ('Concava si preter modum ampliata fuerint, ad sui modum constringimus et quietem inducimus. Si minus, contrarium.' [1])

If there be defect of the retentive energy, we mollify the place with fomentations and cataplasms.

If there be defect of the expulsive energy we use diaphoretics and carminatives (*confortativa*).

If the cause be of a styptic nature use a softening remedy; if dry, a moist one; if the disease arises from constriction apply some remedy which will break it down.

In cases where there is a change from the natural order of things, we restore them to their proper working. If, for instance, there is an apostema, we cure it by bringing it to a head. If the trouble arises from an adhesion (*naturali junctura*) we either use an aperient medicament or else we alter it by surgery. If there is some new growth we take it

[1] The following passage is omitted, as the Latin is very obscure. It is possibly an alternative translation of the foregoing clause, which begins *Concava*. 'In largis autem similiter addito contrario cause, unde vitium acciderit, foramina strictiora suo modo facimus.'

away; if roughness be present we use smoothness, and vice versa.

Of the Removal of Overgrowth.

Overgrowth we remove either in part, as in the case of scrofulous swelling, or totally, as in the case of cancer.

'Separatio' we cure as follows: if from overplus of blood, we take it away (? bleed) at all ages. 'Si ex spermate in pueritia tantum sanamus.'

If a limb be too small we increase its size by exercise and fomentation, if too big we lessen it by rest and bandaging.

Of Displacement of Members.

Displaced members are restored to their normal condition in two ways: (1) by joining what is separated; (2) by separating what is joined.

In the former case there are four essentials: (*a*) to join the separated parts; (*b*) to keep the joined parts in place; (*c*) to prevent displacement occurring again; and (*d*) to maintain the seat of injury in a wholesome condition ('naturam loci custodire').

Of the Sufficiency and Division of Medicine.

The practice of medicine deals with the right ordering of the non-naturals, with giving of drugs (*potio*), and with surgery. Drugs are administered internally by the mouth, by the ears, by the nose, by the anus, and by the vulva. Externally by means of poultices, plasters, and stupes.

Medicines administered internally act in three ways; they loosen or they bind, or they bring about an alteration in quality, as does cold water in a fever.

Sometimes they act in four ways: they reduce over-excess; or they supply deficiency, as, for

instance, flesh or blood when administered; or they bind what is loose, as does a styptic; or they bring about an alteration in quality, as does water in fever.

Of Surgery.

Surgery deals with two tissues, i.e. with the flesh and with the bones.

When dealing with the former it cuts, sews, and ? heals (*coquere*).

When dealing with the latter it consolidates, unites, and scrapes.

Of the Judging of Drugs (*Species*).

The right judging of drugs takes into consideration five different matters: quality, quantity, season (of gathering), arrangement; and the question of whether they be good or bad.

The end of the Book of the Introduction of Joannitius and Praise be to God.

APPENDIX E

GADDESDEN'S AUTHORITIES

Gaddesden was evidently acquainted with, or had even read, the writings of a large number of his predecessors. Many, however, of the authors whom he mentions are unidentifiable, and again the writings of some have become confused owing to the fact that there were two or more of the same name. In some cases he quotes both the name of the author and that of the work, in others only the name of the author, and in one case at least simply the name of the treatise, or rather its opening words. This last

method of reference was common in the Middle Ages, and has survived in the Western Church for the naming of Sundays from the first words of the Introit, e. g. Rorate Coeli (fourth Sunday in Advent), or again Laetare (fourth Sunday in Lent).

So Gaddesden, fol. 48 rect., col. 2, says: 'Certissimum est remedium dicit Alguasinus et Circainstans.' The latter authority is Matthew Platearius the younger, *fl.* 1130–50, who wrote *De Simplici Medicina Liber*, a treatise which began with the words 'Circa instans'.

In the preparation of the short notes upon the various authors I have been most kindly and helpfully aided by Dr. Payne. Some of the writers quoted have, however, surpassed even his knowledge to identify. The order of the names is that in which they first occur.

Authors Quoted or Referred to by Gaddesden.

Haly (Ben Rodoan). Commentary on the *Tegni* (τέχνη) of Galen, otherwise *Microtegni* or *Ars Parva*. Number of times quoted, 98.

Haly, whose full name was Abul-ḥassan 'Ali ben Ridhwan ben 'Ali ben Ja'far, was born at Ghizeh about A. D. 980. He was physician to the Khalif al Hakim, and wrote a number of medical works as well as commentaries upon Hippocrates and Galen. The Arabic translation of Galen was made by Ḥunain, born A. D. 809, and his nephew Ḥubaish. The translator of the *Tegni* into Latin was Constantine the African, about A. D. 1070; of the commentary by Haly, Gerard of Cremona, in the 12th century.

Avicenna. *Canon*. Number of times quoted, 474.

Avicenna, otherwise Abu 'Ali al-Ḥusain ben Abdallah ibn Sina, was born in Bokhara in A. D. 978 and died in 1036. He was not only a celebrated physician,

but also an astronomer and a man of affairs, holding a viziership, and was generally accorded the titles of Rais and Shaikh. His great medical work was the *Canon*, which, together with the works of Galen and Hippocrates, practically dominated mediaeval medical thought. It was divided into five parts; namely, a general view of medicine, materia medica, particular diseases, general diseases, pharmacopoeia. The Latin translation was made by Gerard of Cremona.

CONSTANTINE THE AFRICAN. Works quoted: Practica; Pantegni. Number of times quoted, 40.

Constantine the African, whom Leclerc[1] calls 'un être amphibie', was, according to Petrus Diaconus, born at Carthage (? Tunis), and studied in Baghdad, Cairo, and India. About the year 1072 began the second half of his life, for he arrived at Salerno and very shortly afterwards settled at Monte Cassino. In the retirement of the great Benedictine house he wrote various medical works. Some of these were frankly acknowledged as translations, while others were issued as originals, although really translations. Among the latter was the treatise called *Pantegni* or *Practica*, for the two are the same work. It was a translation of an Arabic work, which, according to the latest researches, is the *Maleki* or *Liber Regalis* of Haly Abbas (i. e. 'Ali ibn al-Abbas), though it was ascribed in the Middle Ages to Isaac Judaeus (i. e. Isaac Israeli). Among the acknowledged translations of Constantine were those of the *Tegni*, of the *Aphorisms* of Hippocrates with the commentary of Galen (according to Constantine the first work of Galen to be translated into Latin), and the *Liber Febrium* and *De Urinis* of Isaac Israeli.

[1] Lucien Leclerc, *Histoire de la Médecine Arabe*, Paris, 2 vols., E. Leroux, 1876. This Leclerc must not be confounded with Daniel Leclerc, a seventeenth-century writer who wrote a History of Medicine, considered a standard work.

See also Viaticum in the note on Gerard of Cremona.

ARISTOTLE. De Morbo; De Animalibus; The Letter to Alexander. Number of times quoted, 15.

Aristotle was born in 384 B. C., his father being an eminent physician by name Nicomachus. Numerous Arabic translations of Aristotle's works were made in the ninth century, and Latin translations were made in Europe in the eleventh, twelfth, and thirteenth centuries. Michael Scot, about whose name so many legends have gathered, translated the *De Animalibus*, probably at Toledo, about 1209.[1]

The Letter to Alexander is now regarded as spurious, and there is no work of Aristotle known in Greek with a title corresponding to *De Morbo*.

GALEN. Works quoted: *De Ingenio Sanitatis; De Crisibus; De Dinamidiis; Comment. in Aphorism. Hippocrat.; Prognostica*, i. e. Commentary on; *De Simplici Med.; De Sinocho; De Morbo et Accidenti; De Interioribus membris; De Mala Complexione; Regimen Acutorum; Megrategni* (sic); *De Juvamentis membrorum; Tegni* with Haly's commentary; *De Passionibus; Viaticum*, fol. 70 rect., col. 2 at foot. Number of times quoted, 417.

Claudius Galen, born in Pergamus about A. D. 130, studied in Greece and Egypt, and came to Rome at the age of thirty-four. He was held in great esteem by Marcus Aurelius. His medical writings were much prized by the Arabs, and numerous translations were made into Arabic, mainly by Ḥunain and Ḥubaish. The principal translators of his works into Latin were Constantine and Gerard of Cremona.

Of the works mentioned by Gaddesden Dr. J. F. Payne writes: 'The *De Ingenio Sanitatis* is another name for the translation from the Arabic of Galen's

[1] Wood Brown, *Life and Legend of Michael Scot*, 1897.

Methodus Medendi, not the book called *De Sanitate Tuenda*, as is sometimes supposed. I have verified several quotations or references in other books, and find that the *Methodus Medendi* is meant.

'I suppose that the word *ingenium* represents some Arabic word meaning Engine, or Instrument (of Health) by which it is to be acquired or recovered, i. e. it appeals to sick people, while the other book, *On the Preservation of Health*, is intended for the healthy.

'*De Crisibus*: genuine.

'*De Dinamidiis*: a spurious work. It is not known in Greek, and only exists in Latin, and was probably written about the end of the twelfth century. The name of the author is unknown.

'*Comment. in Aphorism. Hippocrat.*; *Comment. in Prognost. Hippocrat.*; *Comment. in Regimen Acutorum Hippocrat.*: all with text of Hippocrates are genuine.

'*De Simplici Medicina*: genuine. The full title is *De Simplicium Medicamentorum temperamentis et facultatibus.*

'*De Sinocho*: I cannot find any work of Galen with a Greek title corresponding to this, so suppose it to be spurious. It might perhaps be an extract.

'*De Morbo et Accidenti*: this is unknown in Greek, and is only found in Latin, apparently translated from the Arabic, and therefore not genuine. I strongly suspect that it is a compendium or abstract of several books about symptoms (*accidens*), such as *De Symptomatum Causis*, three books, and *De Symptomatum Differentiis*; also called *De Morborum Causis* and *De Morborum Differentiis*. But this is only a conjecture.

'*De Interioribus Membris*: spurious; also called *Anatomia Interiorum* or *Principalium Membrorum*, a little Latin tract on anatomy, written probably in

the twelfth century, and often ascribed to Magister Ricardus or Ricardus Anglicus. It was attributed to Galen because the preface or prologue begins, "Galienus testatur," or "Galieno testante". The name of Galen coming first has caused it to be generally catalogued under his name in European libraries, and the old British Museum Catalogues have it so. In other libraries, if it is desired to find a MS. of the work, search has first to be made under the name Galen.

'*De Mala Complexione:* genuine; I suppose the same as *De inaequali tempore*, or *De inaequali intempore*, translated by Linacre.

'*Megrategni:* genuine; the same as *Methodus Medendi.*

'*De Juvamentis Membrorum:* genuine; the same as *De Usu Partium.*

'*De Passionibus:* I find no Greek title corresponding to this, so suppose it to be spurious. Whether it is the same as the *Passionarius* called *Galeni*, but really written by Gariopontus of Salerno, I cannot say.

'*Viaticum:* certainly spurious. The *Viaticum* was given out by Constantine the African as his own. The editor of the printed edition says: "Quod Constantinus Africanus sibi arrogare non erubuit." It was also ascribed to Isaac Judaeus, but I think that, even now, the matter is not perfectly clear.' (J. F. P.) See below under Constantine and Gerard of Cremona.

SERAPION THE ELDER. Works quoted: *Practica; De Aggregationibus; ? De Proprietatibus Rerum.* Number of times quoted, 22.

Serapion, who lived in the ninth century, is otherwise known as John the son of Serapion. He was one of the physicians of the celebrated medical school at Gondisapor, a Nestorian establishment. The *Practica*, also called *Breviarium*, was translated by

Gerard of Cremona. Serapion the Younger lived about the end of the eleventh century, and wrote a treatise on drugs, which is possibly the *De Proprietatibus Rerum* referred to.

GILBERT THE ENGLISHMAN. Work quoted: *Practica.* Number of times, 10.

Gilbertus Anglicus flourished at the end of the twelfth, and during the early part of the thirteenth, century. He was physician to Hubert Walter, Chancellor to Richard I and John, and probably took part in the Crusades. He is Chaucer's Gilbertyne, who is mentioned in the *Canterbury Tales* together with Bernard of Gordon and Gaddesden. He studied and practised abroad, and thus got the cognomen Anglicus, which obviously he would not have acquired in his own country. He was a devoted scholar of the school of Salerno, and also well read in the Arabian writers. The *Practica* which Gaddesden quotes is the *Compendium Medicinae* which was printed at Lyons in 1510.

ISAAC JUDAEUS. Works quoted: *De Febribus; De Urinis.* Number of times quoted, 25.

Abu Ya'qub Isḥaq ben Sulaiman al Israili (whose Jewish name is Isaac Israeli) was born in Egypt about the middle of the ninth century, and is said to have lived to the age of over a hundred. He was first in the service of the Aglabite Emir, Ziyadat Allah, and on the fall of that dynasty took service under the Fatimide al Mahdi, and apparently spent the rest of his days at Kairawan. He was the author of sundry medical works besides the two treatises on Urines and on Fevers. The *Pantegni* is probably attributed to him in error.

AEGIDIUS CORBOLIENSIS. Works quoted: *De Pulsibus; De Urinis.* Number of times quoted, 8.

Aegidius Corboliensis, or Gilles de Corbeil, was a celebrated physician of the twelfth century, and

was in the service of Philip Augustus. He studied at Salerno, and has left various works in very fairly classical Latin verse. Besides the *De Pulsibus et Urinis* he wrote a most amusing poem satirizing the clergy, entitled *Hierapigra*, and a poem on drugs, *De Laudibus et Virtutibus compositorum Medicaminum*. There is also a fragment in the Bodleian of a poem entitled *De Signis et Symptomatibus Aegritudinum*. The best account of him is to be found in M. C. Vieillard's *Gilles de Corbeil*, Paris, 1909.

Confusion has arisen between Aegidius Corboliensis and another Aegidius, or rather Joannes de Sancto Aegidio, otherwise John of St. Albans. And this all the more easily in that the latter was also a physician and in the service of Philip Augustus. Yet another Aegidius, namely Aegidius Romanus, flourished at the end of the thirteenth century, and is said to have been the author of a treatise *De Formatione Corporis* or *De Formatione Fetus*. Gaddesden quotes from it under the latter title with the name of the author as Aegidius on fol. 24.

Hippocrates. Works quoted: *Aphorisms*. Number of times quoted, 120.

Hippocrates was the great physician of antiquity. He was a native of Cos, and was born about B.C. 460. The *Aphorisms* from which Gaddesden quotes were those edited with a commentary by Galen, and they were translated into Latin at Monte Cassino by Constantine in the eleventh century. The translation from the Greek into Arabic was made by Ḥunain and Ḥubaish in the ninth century. The most important work of Hippocrates was the treatise entitled *Airs, Waters, and Places*, which was also translated by Ḥunain.

Avenzoar. Gaddesden does not mention any work. Avenzoar is quoted three times, once directly and twice as quoted by Averroes in the

Colliget. The place where he is mentioned directly is on fol. 136 verso, in the section on poisons : 'Item lapis smaragdinus inventus in capite buffonis viridis et splendidus, sic dicit Avenzoar, tritus datus cum aqua vel cum vino ad pondus granorum ix, educit venenum cum vomitu.'

Avenzoar died in 1162; the date of his birth is unknown. His name in full was Abu Marwan 'Abd al-malik ben Abil-'ala ben Zuhr. Averroes, who was his pupil, says in the *Colliget* that he lived to the age of 135 and did not begin to study medicine until he was 40. He lived in Seville in the service of the Almoravide and Almohade dynasties. His chief work was the *Taisir*, which he dedicated to Averroes, but he also wrote a treatise on *Diseases and Remedies* of which a MS. exists at Paris. The *Taisir* was translated into Latin at Venice, and the prologue to the edition printed in 1490 runs as follows :

'Incipit liber editus in Arabico a perfecto viro Abu Maruan Avenzohar, et translatus de hebraico in latinum Venetiis a magistro Paravicio physico ipso sibi vulgarizante magistro Jacobo hebreo. Anno Domini Jesu Christi MCCLXXX ; primo mense augusto die Jovis in meridie.'

Colophon :—'Venetiis MCCCCLXXXX.'

Damascenus. Works quoted : *Aphorisms*, with the commentary of Isidore. Number of times quoted, 53. He is also quoted without mention of Isidore three times.

Joannes Damascenus, sometimes called Janus Damascenus, was given in the Middle Ages as the author of certain works translated from the Arabic. These works are now attributed either to Mesue the Elder, about the eighth century A.D., or to Serapion the Elder, about the ninth century A. D.

The *Aphorisms* quoted by Gaddesden are to be

found bound up in the collection entitled *Articella*, of which many editions were printed. In that printed at Lyons in 1515 they are headed, 'Joh. Damasceni medici clarissimi Aphorismi.' The Latin translation was made by Gerard. Gaddesden almost always quotes from a commentary on the *Aphorisms* by Isidore, thus: 'Sic Isidorus super secunda particula affo. Dama. commento 6°.' Who this Isidore was is unknown, and he and his commentary do not appear to be noticed elsewhere.

Rogerius. No work mentioned. Number of times quoted, 6.

Dr. Payne's note on this name says:—'According to Pansier of Avignon, who has written on the school of Montpellier, the *Rogerina* (major and minor) was written by Rogier, Rogerius de Varone or Barone, a physician of Montpellier, who may have been Chancellor there. He was more "a medical than a surgical writer". He lived about the end of the thirteenth century and his work is also known as *Summa Rogerii* or *Practica*. On the other hand, Pagel strongly asserts the old view that the *Rogerina* means the surgery of the earliest Salernitan surgeon Rogerius, whose work was edited by Roland of Parma, and generally met with under the name *Rolandina*. Roger was born in the twelfth century, and there is nothing to connect him with Montpellier. I agree with Pansier and others; I think the work quoted must be the chiefly medical work of Rogerius de Varone, and not the purely surgical Roger edited by Roland.' (J. F. P.)

Theodoricus. Works mentioned: *Major Chirurgia*. Number of times quoted, 4.

Theodoric was the pupil and son of Hugo of Lucca. He was also Bishop of Cervia and surgeon to Innocent IV. Guy de Chauliac unkindly says that he compiled his book by stealing everything

from Bruno, and he certainly took his practice of dressing wounds with wine and dry dressings from that surgeon. He died in 1298.

AVERROES. Works quoted: *Colliget*, i. e. *Kitab al-Kulliyat, Generalities of Medicine*; Commentary on the *Cantica* of Avicenna. Number of times quoted, 98.

Abul-walid Muḥammad ben Aḥmad ben Muḥammad ibn Rushd, commonly known as Averroes, whose name has come down to us rather as a philosopher than as a physician, was born at Cordova in A. D. 1126. Besides being philosopher and physician, he was first Cadi of Seville and later Cadi of Cordova. He was accused of free-thinking opinions, and was exiled to Lucena near Cordova and his goods confiscated. He died in 1198.

The *Colliget* is a work in seven Books dealing with medicine in general. The *Cantica* of Avicenna, upon which Averroes wrote a commentary, is a poetical handbook of medicine in the metre called in Arabic, *Arjuza*. Both works were translated into Latin by Ermengardus of Montpellier about the middle of the thirteenth century.

MESUE. Works quoted: Generally no name, sometimes *Antidotarium*. Number of times quoted, 33.

The Mesue (i. e. Ibn Masawaih) from whom Gaddesden quotes was probably the person known as Mesue the Younger, who is said on the authority of Leo Africanus to have lived in the eleventh century. Anyway, a work under his name was current in the Middle Ages, written in Latin, but no Arabic original exists. The work in question is one on drugs, and is divided into four parts. The last part, *De Aegritudinibus*, deals with the medicines proper for each disease in particular.

RHAZES. Works quoted: *De Doloribus Junctu-*

rarum; Aphorisms; Almansor. Number of times quoted, 25.

Abu Bakr Muḥammad ben Zakariya, commonly called Rhazes, was born about the middle of the ninth century and died about the year A. D. 932. He studied at Baghdad, and his great work is called al-Ḥawi, in Latin *Continens*. This was a complete treatise on the practice of medicine, and is specially valuable apart from its medical teaching in that it contains notices of celebrated men who had preceded him, Greek, Arab, and Persian. His other chief medical work was the *Almansor*, or, in Arabic, *al-Manṣuri*, which was dedicated to al-Manṣur, prince of Khorassan. He has also left a most important treatise upon small-pox and measles. In addition to these there are a number of treatises attributed to him under the name of *Abubecri*, which were translated into Latin by Gerard. Among these are the *De Doloribus Junctur arum*, and the *Aphorisms*. Gerard also translated the *Almansor*, Book IX of which, *De Aegritudinibus a capite usque ad pedes*, was a favourite mediaeval textbook.

Joannitius. Work quoted: *Isagoge.* Number of times quoted, 3.

Joannitius, into which the name of Ḥunain ben Isḥaq was latinized, was one of the great physicians and translators of the ninth century. He was born in the year A. D. 809 of a Christian Arab family at Ḥira. When a young man he went to Baghdad to ask Yaḥya ibn Masawaih, i. e. Mesue the Elder, to receive him as his pupil. The people of Ḥira had a reputation for stupidity, 'passaient pour des Béotiens,' to use Leclerc's expression, and Mesue therefore repulsed Ḥunain. He accordingly went away and studied in Greece, and possibly in Alexandria, for two years. He then travelled in Persia, studied Arabic at Bassora, and returned to Baghdad. Here

he commenced making translations from the Greek into Arabic of such excellence that they won the esteem of Gabriel, son of Bukht-yeshu', and of Mesue himself, who now received Ḥunain with open arms. Ḥunain, assisted by his nephew Ḥubaish, was a most voluminous translator. Together they translated most of Hippocrates and the sixteen books of Galen, to say nothing of various works of Plato and Aristotle. Ḥunain's introduction to the *Microtegni* of Galen was translated into Latin, and was much used in the Middle Ages as a textbook under the title of *Isagoge Joannitii in Medicinam.* The name of the translator is unknown, and in places the Latin is very obscure.

Nicholas. Work quoted: *Antidotarium.* Number of times quoted, 17.

Nicholas Praepositus of Salerno, who lived about 1150, wrote a collection of formulae for compound medicines, or *Antidotarium*, which became one of the chief mediaeval textbooks in the subject. It was immensely popular, and formed the foundation of various other books up to the end of the sixteenth century. Then it aided in the compilation of the new Pharmacopoeias and was superseded by them.

Bernard of Gordon. No work mentioned. Number of times quoted, 3.

Bernard of Gordon was a teacher at Montpellier. He began to teach there in A. D. 1285 and wrote his *Lilium Medicinae* in 1305. It was often printed, an edition appearing at Frankfort so late as 1617. Although he does not mention the name, this is the book to which Gaddesden refers.

Gerard of Cremona. Work quoted: *Viaticum.* Number of times quoted, 5.

Gerard of Cremona was born in 1114 and died in 1187. He worked at Toledo, where he produced translations of seventy-six works. Among the medical authors whom he translated was Galen, with

a commentary of Ibn Ridhwan, Isaac Judaeus, Rhazes, Serapion, and Avicenna.

It is uncertain whether Gerard of Cremona was the author of the *Viaticum*, or rather of the commentary upon it. Littré, in the *Histoire Littéraire de la France*, says that Gerard of Berry was the author of the commentary. The *Viaticum* itself was put forth by Constantine (p. 168) as his own, but Leclerc says that it is really a translation of a treatise by Ibn al-Jazzar, who was born at Kairawan and died about A. D. 1009. It appears to have been a kind of medical handbook for travellers. The authorship was also ascribed to Isaac, and on fol. 35 rect., col. 2, Gaddesden says: 'Dicit Isaac secundo Viatici vel Constantinus quod si &c.'

Gaddesden mentions or quotes from a number of other authors or treatises. Some are difficult or impossible to identify, and often he mentions no particular book. Of those who can be identified are the following:

Dioscorides. He is supposed to have lived about the second century A.D., and wrote a book on medicinal herbs and other remedies. This was translated from the Greek into Arabic by Stephanus, son of Basilius, about the middle of the ninth century. Dioscorides was Greek, a native of Anazarba in Cilicia, and served as an army surgeon. A mediaeval Latin translation was attributed to Peter of Abano (Petrus Aponensis), but Dioscorides was not really well known until the revival of learning in the sixteenth century. It is not likely that Gaddesden knew the complete works of Dioscorides, but there were several books containing extracts early translated into Latin, and known to the Anglo-Saxons. Sometimes the author of these is called Pseudo-Dioscorides. The Arabs apparently did not have much to do with making Dioscorides known in Europe.

Rufus. Rufus of Ephesus probably lived about the beginning of the second century A.D. Gaddesden quotes him five times. He wrote a large number of medical treatises, very many of which were translated into Arabic. Latin translations were also made at an early date.

Albertus Magnus. Works quoted: *De proprietate Rerum; De Medicinis simplicibus; Lib. Methaurorum.* Number of times quoted, 5.

Albertus Magnus was born in 1193, studied at Padua, and entered the Dominican Order. In 1260 he was made Bishop of Ratisbon. He possessed extensive chemical and mechanical knowledge, extensive, that is, for his age, and was considered to be both sorcerer and magician.

Cesarius. Only quoted once and no work mentioned.

Cesarius was born A.D. 330, and was physician to the Emperor Constantius who died in 361.

Joannes de Sancto Amando. Work mentioned: *Tacuinus.* Number of times quoted, 2.

Joannes de Sancto Amando was a Canon of Tournai, and lived in the thirteenth century. He wrote an exposition on the *Antidotarium* of Nicholas and also some Tables, i.e. Concordantiae. These tables were also called Taquinus, from a corruption of an Arabic word meaning 'Tables' (see below under Tagnus). On fol. 80 recto, col. 2, appears 'Dicit Joannes de sancto Amando . . . in tranquillo suo'. This sentence should read 'in Tacuino suo'.

Tagnus. This word seems to have been a puzzle to mediaeval scribes and printers. On fol. 35 rect., col 2, it appears as *Daqn.*; on fol. 101 rect., col. 1, as *Tagn.*; on fol. 148 rect., col. 2, as *Targnu.*; and on fol. 80 rect., col. 2, as *Tranquillus*, i.e. 'Joannes de Sancto Amando in tranquillo suo'. The word is really *taquinus* or *tacuinus*, and is a corruption of an

Arabic word *taqwim* meaning 'table', not a board, but something in tabular form.

The word occurs in the title of a book printed at Strasbourg in 1531. *Tacuini Sanitatis Elluchasem Elimithar medici de Baldath.* Elluchasem Elimithar was the Latin rendering of Abul-ḥasan al-Mukhtar ben al-Ḥasan ben 'Abdun ben Sa'dun ben Buṭlan, who was a Christian Arab living at Baghdad during the eleventh century, and his book was called *Taqwim aṣ-ṣiḥḥa.* It was a treatise on hygiene in general. When it was translated into Latin is unknown. It is possible that Gaddesden may have been quoting from this book when he says 'secundum Tarqnu' or 'dicit Daqn'.

Theophilus. Quoted once.

This Theophilus is probably Theophilus Protospatharius who held office under Heraclius. He wrote a treatise *De Urinis*, which is found in many editions of the *Articella* and is generally immediately preceded or followed by another treatise by Philaretus, *De Pulsibus*. Gaddesden quotes this also. Philaretus and Theophilus are presumably the same person.

Urso. Urso was one of the Salernitan Masters and flourished about A.D. 1180. Gaddesden quotes him twice 'in affor. suis'. Urso was one of the teachers of Gilles de Corbeil, who speaks of him as

> 'Strenuus ambiguos caussarum solvere nodos
> Cujus ab ingenio nulla indecisa recedit
> Quaestio.' . . .

(*De medicamentis compositis*, i. 122.)

Hugo de Lucca. Quoted once.

Hugo de Lucca was the city surgeon of Bologna in A.D. 1214. No writings of his have come down to us, but his methods of practice have been described by his son and pupil Theodoric, Bishop of Cervia, q.v.

Lanfranc, Roland, Bruno. These three surgeons are quoted in one place, fol. 157 verso, col. 2,

as being old-fashioned and wrong in their surgery. Lanfranc was pupil of William de Saliceto and flourished at the end of the thirteenth century. He wrote a treatise on Surgery which was translated into English about 1380, and also about 1420. These two texts have been published by the E.E.T.S., Original Series 102, 1894.

Roland is Roland of Parma. In 1264 he edited the *Practica Chirurgiae* of Roger, q. v.

Bruno was a thirteenth-century surgeon who lived just previously to Theodoric. It was from him that Theodoric took the idea of dressing wounds with wine and dry dressings.

Rabbi Moses. Quoted once.

Rabbi Moses was the great Maimonides. His Arabic name was Abu 'Imran Musa ben Maimun, and he was born at Cordova in A.D. 1135. He was educated by his father; although a Jew by birth, he is said to have conformed to the religion of Islam when about thirty years of age. His medical writings include a commentary on the *Aphorisms* of Hippocrates, some *Aphorisms* of his own in twenty-five chapters, an abridgement of Galen, and the *de Regimine Sanitatis*.[1] This was written to the order of the Sultan of Egypt, al-Malik al-Afdhal. The Latin translation was made by Ermengardus (Armengauld) of Montpellier. There is a MS. in the Bodleian. Several printed editions are known which bear the title, *Rabbi Moysis Maimonidis, de Regimine Sanitatis*; or *Tractatus Rabbi Moysis quem Soldano Babiloniae transmisit.*

Haly Abbas. Works quoted: *De Dispositione Regali.* Quoted once.

'Ali ibn al-'Abbas, who died in A. D. 994, was generally called al-Majusi or the Magus, which seems to show that he was Persian in origin. His

[1] This must not be confounded with the much better known *Regimen Sanitatis* of Salerno.

great work on medicine, the *Maliki* or *Royal Book*, is an encyclopaedia of Medicine. Constantine the African translated most of it about 1080, and it was issued as by Haly, by Stephen of Antioch, in 1127 under the title of *Regalis Dispositio*. Printed editions appeared at Venice in 1492 and at Lyons in 1523. The *Maliki* enjoyed a great vogue until the appearance of the *Canon* of Avicenna, when it rapidly went out of fashion. So says Jamal-ad-din al-Qifṭi, who wrote a history of scientific men early in the thirteenth century.

Platearius. Works quoted: *De Aurea*; *Circa Instans*. Number of times quoted, 2.

Platearius was Matthew Platearius, a member of a distinguished medical family of Salerno, one of whom married Trotula. Matthew wrote a commentary upon the *Antidotarium* of Nicolas, and also *De Simplici Medicina Liber*, which is generally quoted as *Circa Instans*. Gaddesden quotes it so on fol. 48. The opening words of the book are 'Circa instans negotium'.

Joannes. Quoted on fol. 6 rect., col. 1, as being the inventor of a laxative powder made of agaric, turbith, rhubarb, and ginger. This Joannes may have been Pope John XXI, otherwise called Petrus Hispanus. He studied at Paris and Montpellier, and was physician to Gregory X. He wrote a *Thesaurus Pauperum* containing many prescriptions and recipes.

Arnold de Villanova. Quoted once.

Arnold was born in 1235 and died in 1312. He led a strenuous and turbulent life. He was a Doctor in the three faculties of divinity, law, and physic. He wrote a commentary on the *Regimen Sanitatis* of Salerno, and in addition (possibly) the *Breviarium Medicinae*.

Alexander. Alexander Trallianus. There were early Latin translations of his works, well known to the Anglo-Saxons amongst others, and later. He is

generally called Alexander Yatros in the old books. The date of his birth was A. D. 525.

RICARDUS. Probably Magister Ricardus of Salerno, otherwise called Ricardus Anglicus. He wrote a work called *Micrologus* containing five short treatises entitled, *Practica*, *De Urinis*, *Anatomia*, *Repressiva*, *Prognostica*. He was a Master of Salerno about the end of the twelfth century.

GUALTERIUS. Gualterius Agulinus, author of an extremely popular book on Urines, copied innumerable times. It has been edited and published by A. J. Pfeffer, Berlin, 1891.

ALPHINGUI or ALPHINQUI. Quoted on fol. 125 verso, col. 1.

Possibly this name is a corruption of Abenguefit or Akbenguefit, otherwise Eben Guefit or Ibn Wafid, who was born in Toledo in A. D. 998. He was the author of a work on drugs and medicines, which was translated into Latin by Gerard of Cremona under the title of *De Virtutibus medicinarum et ciborum*.

ALGRAPH(IR)US: ALGAPH(IC)US. Quoted on fol. 27 rect., col. 2.

Possibly Aḥmad ben Muḥammad al-Ghafiqi, an eminent physician at Cordova who died in A. D. 1165.

ALGUASIN. Quoted on fol. 48. Possibly Alguasir, author of a *Liber de curat. lapidis*.

ANTICLAUDIANUS. Quoted on ff. 88–89. Not an author, but the name of a poem by Alanus de Insulis. The reference is Distinct. II, Cap. v.

BUSCOLIENSIS. Quoted on f. 54. Unknown.

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